

Proposal

RFP #36-2019

Engineering Services for the Lexington Area Metropolitan Planning Organization (LAMPO)

Prepared for
Lexington-Fayette Urban County Government
September 3, 2019



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September 3, 2019

Todd Slatin, Purchasing Director
Lexington-Fayette Urban County Government
Room 338, Government Center
200 East Main Street Lexington, KY 40507

**Re: RFP # 36-2019
Engineering Services for the Lexington Area Metropolitan Planning Organization (LAMPO)**

Dear Mr. Slatin:

AECOM is pleased to submit this proposal to support the Lexington Area Metropolitan Planning Organization (LAMPO) with updating the Regional ITS Architecture for the Lexington-Fayette and Jessamine County areas. The AECOM Team provides both the local and national expertise, resources, and experience necessary to update the 2015 Lexington Area ITS Architecture developed by the same AECOM Team in this proposal. We have assembled a strong and dynamic team, specifically tailored to meet all project requirements. The AECOM Team includes committed key individuals who have performed significant strategic planning and architecture projects that involve ITS, connected and automated vehicles and smart city technologies, as well as local transportation planning and traffic operations projects. This Project Team brings invaluable local knowledge of the existing operations as well as experience from past ITS projects across the country and specifically, for the LAMPO.

AECOM is a recognized leader in all aspects of ITS, including planning, design, implementation, operations, maintenance, and program management. We have extensive experience in ITS Architecture, having been involved in the development or updating of over 40 regional or state ITS Architectures across the country. AECOM is also well acquainted with the transportation stakeholders and needs in the Lexington area from its involvement in the 2015 Lexington Area ITS Architecture update, Hamburg Signal Retiming, Town Branch Commons and the US 27 Access Management Plan. AECOM has a prominent footprint with transportation in the Bluegrass Region. We were a team member for the recently completed LFUCG Hamburg Signal Retiming project ; we have held the KYTC District 7 Traffic Engineering Services contract since its inception in 2007; and are serving as the program manager for Town Branch Commons. Our partner Integrated Engineering (DBE) is a local multidisciplinary planning and engineering firm that will assist with GIS and stakeholder involvement activities.

Our strength is in our team of subject matter experts. Vanessa Nghiem, the Project Manager, has been working on traffic projects in Kentucky her entire career and served as the project manager on the previous ITS Architecture update in 2015. Vanessa has been managing the KYTC District 7 Traffic Engineering contract for the past six years. Vanessa will be supported by AECOM's national expert on ITS Architecture Dr. Ming- Shiun Lee, PhD, PE. Ming has led the development of over 40 regional and statewide ITS Architecture plans. Vanessa, Ming, Paul Slone and Dan Nelson all worked on the previous ITS Architecture update. Our team will be able to leverage the previous project knowledge and hit the ground running.

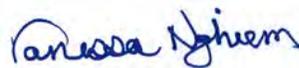
With the selection of AECOM, LAMPO will receive the benefits of working with a project manager that you and many of the area stakeholders know well. Supported by the best ITS Architecture professionals AECOM has to offer, we will deliver a solid product that will satisfy FHWA requirements and chart the course for future ITS projects in the LAMPO area.

Thank you for your consideration.

Sincerely,



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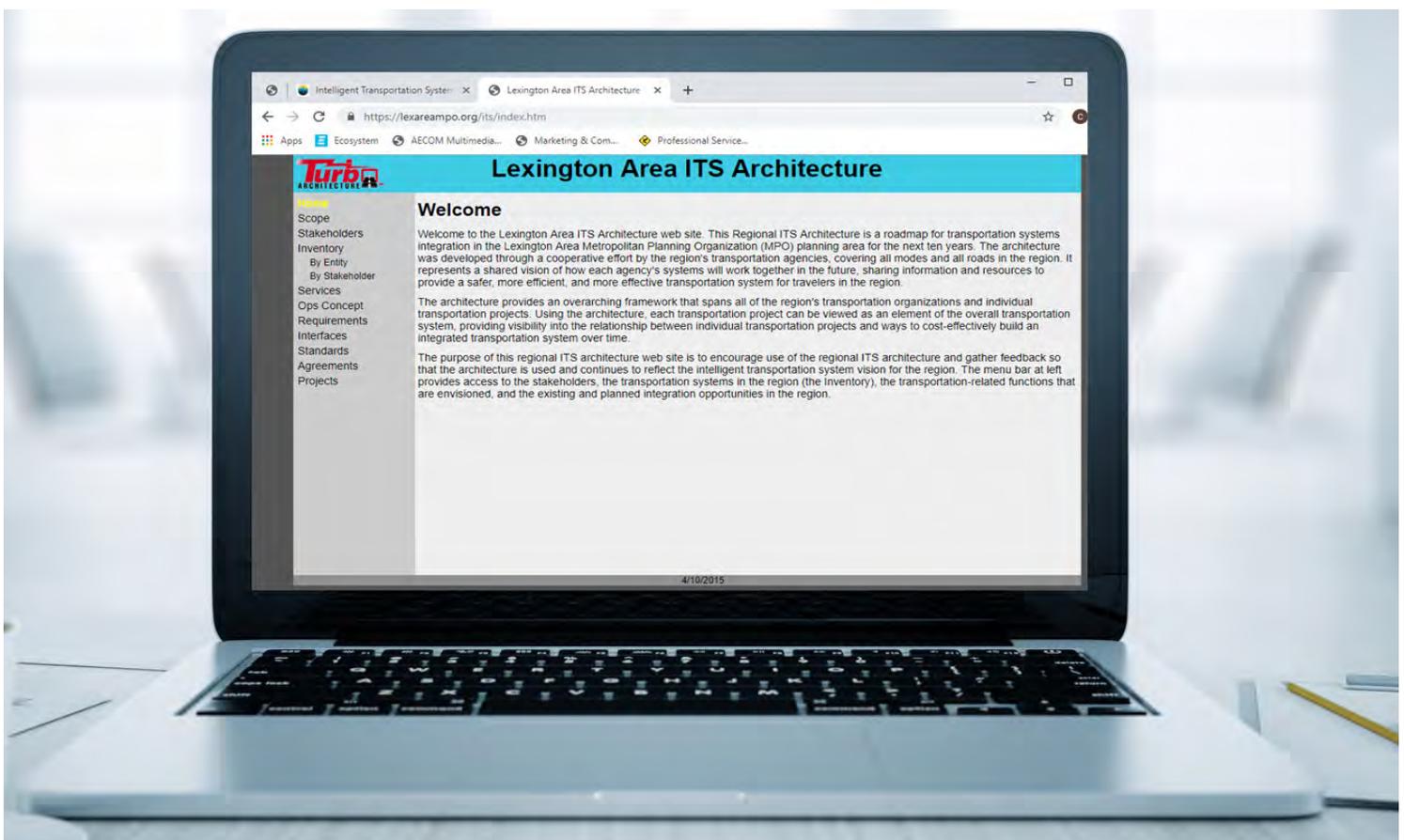
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01

Company Qualifications & Experience



The AECOM team assisted LAMPO with the previous 2015 Lexington Area ITS Architecture update

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Firm & Team Introduction

Transportation is changing, and so is the delivery of our services. Throughout the world, we apply innovative technology solutions to improve our transportation systems' safety, reliability and mobility.

When transportation systems don't work as planned, we all lose—transportation becomes congested, travelers become frustrated and transportation agencies must use valuable resources to make quick and often inefficient changes with small issues sometimes costing big dollars. **We understand and we can help.** Our professionals are global leaders in **intelligent transportation systems and technology solutions.** We combine innovation, insight, knowledge and skills across a complete life cycle of services delivering cost-effective innovative projects that keep costs down and travelers moving.

About AECOM

AECOM Technical Services, Inc. (AECOM) is a full-service Transportation and Design firm which has the depth of technical experience to meet the multi-discipline needs of our clients. AECOM has been providing engineering services in Kentucky for over 50 years. We have the local and nearby resources to successfully deliver this project to the Lexington Fayette Urban County Government (LFUCG) on-schedule and on-budget. With more than **70** employees in Kentucky, and over **5000** in the surrounding region, we can commit the necessary resources to meet the deadlines and milestones of this project.

This project will be managed out of our Louisville, Kentucky and Cincinnati, Ohio office locations:

<p>AECOM 500 W Jefferson Street Suite 1600 Louisville, KY 40202</p>	<p>525 Vine Street Suite 1800 Cincinnati, OH 45202</p>
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Our local transportation and traffic engineering staff in Louisville and Cincinnati are just a little over an hour away from Lexington.

TOP 500

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ENR2019

- 1 Overall Transportation
- 1 Highways & Bridges
- 1 Mass Transit & Rail
- 2 Top Design Firm Overall

Accolades

Each year, media and independent organizations measure and evaluate our markets and competition. These surveys offer a clear picture of our reach and value to clients. For example this year, Engineering News-Record (ENR) ranked AECOM as the #1 firm in transportation and #2 overall.

Partner Firm—Integrated Engineering

AECOM has partnered with Lexington-based firm Integrated Engineering, PLLC (IE). IE is a small emerging engineering company with a wide array of experience in various fields of design. IE is classified as a Disadvantaged Business Enterprise (DBE) by the Kentucky Transportation Cabinet & Lexington Fayette Urban County Government (LFUCG).

KYTC Prequalification

AECOM is prequalified by the Kentucky Transportation Cabinet (KYTC) for Intelligent Transportation Systems (ITS) in all categories. For details, please see below:

✓ KYTC Prequalification: Intelligent Transportation Systems
✓ ITS: Architecture Development
✓ System Design, Deployment & Integration ITS: System <ul style="list-style-type: none"> - IVHS - ITS / Central Concepts - ITS / Communication Planning & Development - ITS / System Deployment - ITS / System Integration
✓ ITS: System Maintenance, Management & Operations
✓ ITS: Technology / System Evaluation
✓ Congestion Management Engineering
✓ = Prequalified for Services

RFP Evaluation Criteria

To assist the review and evaluation of AECOM's technical response, we've provided the following roadmap of our response in relation to the evaluation criteria for this RFP.

Selection Criteria	The AECOM Team Advantage	Section
 <p>Specialized experience and technical competence of the person or firm (including a joint venture or association) with similar Regional ITS Architecture Studies. (20 points)</p>	<p>We bring extensive history assisting state and local agencies in effectively applying the Systems Engineering process for transportation projects, including ITS. AECOM is an industry leader in ITS architecture development—we have led more than 60 ITS planning and 40 ITS architecture projects.</p>	01
 <p>Capacity of the person or firm to perform the work, including any specialized services, within a 6-month period from the Notice to Proceed. (20 points)</p>	<p>Deep bench of over 500 regional technical professionals with the support of about 88,000 professionals worldwide. We have the capacity to complete this project within the 6-month time period as required by the LAMPO.</p>	01
 <p>Familiarity with the details of the project. (20 points)</p>	<p>Our team is located within the project study area region and we bring a wealth of knowledge in the past, present and future of traffic management in the region. AECOM (URS) assisted LFUCG/LAMPO with the previous 2015 Lexington Area ITS Architecture Study.</p>	02
 <p>Project approach and proposed procedures to accomplish scope of project. (20 points)</p>	<p>Proven approach to successfully deliver ITS architecture development and update projects across the country. Experience using the latest ARC-IT Version 8.3 (released in June 2019) and with incorporating emerging technology solutions such as connected vehicles and smart city technologies into ITS planning and architectures. Additionally, our project approach focuses on stakeholder interaction and input to successfully arrive with an updated Regional ITS Architecture.</p>	02
 <p>Past record and performance on LFUCG contracts or other governmental agencies and private industry contracts with respect to such factors as control of cost, quality of work and ability to meet scheduling. (10 points)</p>	<p>Proven staff with direct experience bolstered by a strong team which includes local supporting firm Integrated Engineering (IE). LFUCG and LAMPO knows our team and has depended on our engineering expertise and problem-solving know-how on several past and current projects.</p>	01
 <p>Degree of local employment to be provided by the person or firm. (10 points)</p>	<p>For this project, we have proposed a Kentucky-based team supplemented by regional experts. Our teaming partner, Integrated Engineering, is based in Lexington.</p>	01
 <p>LFUCG's Affirmative Action goals: 10% MWDDBE participation + 3% Veteran-Owned participation</p>	<p>AECOM has an award-winning track record for fostering meaningful participation with DBE partners, as well as for diversity and inclusive hiring practices within the AECOM organization.</p>	03

Firm Qualifications



AECOM ITS Planning and Architecture Development Experience

AECOM has led more than sixty ITS planning efforts and over forty ITS Architecture projects around the nation including the development of strategic plans/ architectures and program management for large and small urban and rural areas.

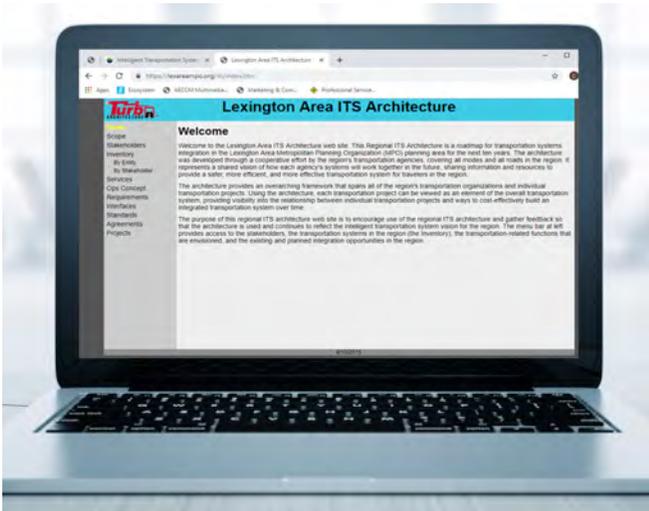
The AECOM approach to ITS planning and architecture development invariably emphasizes the important role of stakeholder involvement, agency coordination, cooperation and consensus building.

This key emphasis on outreach, communication and coalition building has been the cornerstone in AECOM's proven success in developing ITS strategic plans and architectures throughout the nation. AECOM has assisted state, regional and local agencies with developing vision, goals, objectives, and performance measures for their ITS programs, including applications of emerging technologies such as connected and automated vehicles and smart city technologies.

AECOM has also worked with agencies on developing and incorporating S.M.A.R.T. (Specific, Measurable, Agreed, Realistic, and Time-Bound) objectives and performance measures into their ITS architecture as recommended in the FHWA publication *Advancing Metropolitan Planning for Operations: The Building Blocks of a Model Transportation Plan Incorporating Operations*.

The **AECOM** team is the right choice for LAMPO's ITS Architecture project needs.

-  Our team successfully assisted LFUCG with the development of the 2015 Lexington Area ITS Architecture.
-  AECOM has direct experience using the latest ARC-IT Version 8.3 in ITS architecture development.
-  AECOM has helped several MPOs and states plan for implementing connected and automated vehicles and emerging technologies and incorporate these technologies into ITS architectures.



AECOM updated the Lexington Area ITS Architecture in 2014-15

OKI region. As part of this effort, AECOM developed a stakeholder survey for regional agencies to indicate their highest priority ITS needs and comment on existing and planned ITS projects. AECOM conducted a stakeholder workshop in May 2016 to present survey results and gather additional feedback on the representation of survey feedback within the Regional ITS Architecture. AECOM utilized Turbo Architecture Software to document the state of ITS deployment and to ensure conformance with the National ITS Architecture and FHWA Final Rule 940 and FTA Final Policy on ITS Architecture and Standards. A Final Report was produced to include all the pertinent information for the Regional ITS Architecture. In addition, a regional ITS architecture website was created to facilitate OKI’s and stakeholders’ use and understanding on how their ITS elements are interconnected and integrated at system, regional and statewide levels. AECOM also developed an Architecture Maintenance and Use Plan that provides guidance to OKI staff on how to properly update and maintain the Architecture.

DriveOhio / Ohio DOT Systems Engineering Analysis for Automated Vehicle / Connected Vehicle Technology

Client DriveOhio
Contact Missy Anverse
Phone (614) 752-8859
Email Missy.Anverse@drive.ohio.gov

AECOM supports DriveOhio and the Ohio DOT with systems engineering analysis to establish a statewide framework to guide current and future automated vehicle / connected vehicle (AV/CV) strategies, testing and deployments in Ohio. AECOM engages stakeholders throughout the State of Ohio, including review of relevant work that can be leveraged from the Columbus Smart City Initiative, the Smart Columbus Operating System, and other going AV/CV activities in Ohio. AECOM also engages other States that have either started, in development and have completed areas of current and future AV/CV strategies, testing and deployments.

AECOM performs extensive stakeholder outreach and engagement activities to obtain stakeholders inputs and buy-ins to establish the goal and vision of the program. As part of the stakeholder engagement effort, a comprehensive Stakeholder Engagement Plan was developed that identified methods, tools and schedule to engage stakeholders in various activities throughout the project.

Key tasks of the project include:

- Development of a statewide AV/CV architecture
- Development of a Concept of Operations
- Definition of System Functional Requirements
- Development of high-level and detailed system design
- Definition of Software System Requirements
- Preparation of a master communications plan
- Investigation of public-private partnership opportunities
- Development of a Program Plan to serve as a roadmap for statewide deployments
- Identification of early winner pilot projects and analysis of infrastructure needs to support AV/CV operations

Ohio Statewide ITS Architecture

Client Ohio Department of Transportation
Contact Nick Hegemier, Transportation Engineer
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Email Nick.Hegemier@dot.state.oh.us

AECOM assisted the Ohio Department of Transportation (ODOT) with developing a Statewide ITS Architecture that reflects the current and future ITS elements and projects throughout the state of Ohio. As part of this effort, AECOM performed an extensive review of the Regional ITS Architectures previously developed for seven larger metropolitan areas in Ohio to understand the current state of ITS planning and deployment in those regions. AECOM utilized Turbo Architecture Software to document the state of ITS deployment and to ensure conformance with the National ITS Architecture and FHWA Final Rule 940 and FTA Final Policy on ITS Architecture and Standards. A Final Report was produced to include all the pertinent information for the Statewide ITS Architecture. Also, a website for the architecture was developed that provided visual tools and detailed information allowing ODOT and stakeholders for a better understanding of how their ITS elements are interconnected and integrated at system, regional and statewide levels. AECOM also developed an Architecture Maintenance and Use Plan that provided guidance to ODOT staff on how to properly update and maintain the Architecture.

Northeast Ohio Areawide Coordinating Agency (NOACA) Region ITS Architecture Update and Strategic Plan

Client Northeast Ohio Areawide Coordinating Agency
Contact Brian Blayney, PE, Manager of Safety and Operations
Phone (216) 241-2414, Ext. 302
Email BBlayney@mpo.noaca.org

AECOM is updating the regional ITS architecture and

strategic plan for the five counties of the Northeast Ohio Areawide Coordinating Agency (NOACA) region. The comprehensive update includes engaging stakeholders; reviewing transportation needs and services for the region; updating the status of projects; establishing new goals and strategies; and updating system functional requirements, project sequencing, ITS standards, agency agreements. The comprehensive update includes the themes of the USDOT's 2015-2019 ITS Strategic Plan, and define interfaces, functions and standards to support early deployments of connected/automated vehicles for the NOACA region.

Extensive stakeholder engagement activities, including surveys, workshops and interviews, were conducted. AECOM is currently analyzing the regional ITS inventory and stakeholder needs to identify gaps in needed ITS services as well as how these gaps could be addressed. The project will also identify integration opportunities among agencies within the region and how cooperation between agencies in the deployment of ITS systems can be used to meet the regional transportation needs.

Minnesota ITS Planning & Statewide Architecture Update

Client Minnesota Department of Transportation
Contact Rashmi Brewer, MnDOT ITS Project Engineer
Phone (651) 234-7063

AECOM has assisted the Minnesota Department of Transportation (MnDOT) with updating the Statewide ITS Architecture for the state of Minnesota in 2009, 2014 and 2018. The updated architecture meets requirements of the U.S. DOT's National ITS Architecture and allows MnDOT to enhance transportation operations which increases safety and efficiency. By identifying and adhering to National ITS standards, MnDOT can maintain an open environment for ITS development. The updated Statewide ITS Architecture helps MnDOT leverage system effectiveness and provides enhanced service to users by integrating systems using these common standards.



Intelligent transit signs in Minnesota

The first effort in 2008-2009 updated the 2001 Minnesota Statewide ITS Architecture to reflect the ITS visions and investments as well as ITS needs as of 2008. In this effort, AECOM assisted MnDOT with the following tasks:

- Performed an overview of the existing Minnesota Regional ITS Architecture to identify gaps and new data that needed to be gathered
- Identified applicable National ITS standards
- Developed goals, objectives and performance measures and documented Needs and Service for each of the service package areas (i.e. maintenance and construction management, advanced public transportation systems, advanced traveler information systems, advanced traffic management systems, commercial vehicle operations, emergency management, archived data management, and advanced vehicle safety systems)
- Documented the updated Regional ITS Architecture and Turbo Architecture
- Developed an implementation strategy that identified dependencies among projects as well as an overall sequencing plan to show how the implemented projects can be deployed over time.
- Developed a detailed description for each project to help guide future implementation. Each project description included a description of the project concept, participating stakeholders and their roles and responsibility, technology assessment, project level architecture, goals and objectives addressed, estimated costs, and benefits.

The first update effort was completed in 2009. The resulting Architecture is one of the best practices highlighted in the FHWA Primer: *Applying Regional ITS Architectures to Support Planning for Operations*.

Under a subsequent work order, MnDOT retained AECOM in 2011 to provide professional services to update the Statewide ITS Architecture through 2014. Under the 2nd work order contract, AECOM assisted MnDOT with refining the ITS vision, goals, objectives and performance measures, developing a refined, robust process for stakeholders to apply for ITS projects, updating the architecture to be consistent with National ITS Architecture Version 7.0, and updating the ITS projects implementation plan. As part of this update process, AECOM applied FHWA guidance on the use of an objectives-driven, performance-based approach to incorporating the ITS Architecture update in planning for operations. AECOM worked closely with MnDOT on incorporating S.M.A.R.T. objectives and performance measures into the ITS Architecture as recommended by a series of FHWA publications on planning for operations. AECOM also updated the ITS Architecture Maintenance Plan and a checklist for ITS projects for use by MnDOT staff in the future to keep the Statewide Regional ITS Architecture and Implementation Projects update to date. The 2nd work order was completed in September 2014.

MnDOT again retained AECOM to perform a comprehensive update of the Architecture in 2017. In the 2017-2018 effort, the update focused on inclusion of emerging technologies such as connected and automated vehicles and smart city technologies, as well as updating the architecture to be in conformance with the National ITS Architecture [Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) Version 8.2]. The updated architecture was published in January 2019.

Flint Hills Regional ITS Architecture

Client Flint Hills Metropolitan Planning Organization
Contact Stephanie Watts, Senior Transportation Manager
Phone (855) 785-3472
Email Stephanie@flinthillsregion.org

AECOM worked with the Flint Hills Metropolitan Organization (FHMPPO) in Manhattan, Kansas to create a Regional ITS Architecture that reflects the current and planned ITS devices and systems in the region. AECOM coordinated the development of the first ITS Architecture for the Flint Hills Region with the development of a Long-Range 2040 Metropolitan Transportation Plan. AECOM conducted multiple stakeholder meetings with regional agencies and also distributed stakeholder surveys to better understand the current state of ITS deployment and stakeholder needs in the region. AECOM then utilized Turbo Architecture software to develop the regional ITS architecture that is in conformance with the National ITS Architecture and FHWA Final Rule 940 and FTA Final Policy on ITS Architecture and Standards. Deliverables produced include: (1) an Architecture Report that summarizes key components of the architecture and provides useful information to assist stakeholders with planning, deployment, operations and maintenance of their current and future systems; (2) a Turbo Architecture database; (3) a Turbo Architecture generated detailed architecture report; (3) a website generated using Turbo Architecture; and (4) an Architecture Maintenance Plan that provided guidance to FHMPPO on how to properly perform on-going maintenance and periodical updates to the architecture.

Minnesota Strategic ITS Research and Development Plan

Client Minnesota Department of Transportation
Contact Sue Sheehan, ITS Program Manager
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Email susan.sheehan@state.mn.us

The ITS Unit in Minnesota Department of Transportation (MnDOT) Office of Traffic, Safety & Technology is responsible for researching, developing, field testing and providing technical support for new ITS products, methods and systems. Once these products, methods and systems are developed to the point of being effective and reliable, other functional areas of MnDOT, such as MnDOT district offices, are then responsible for any routine deployment and operation of the developed systems. To focus on

ITS development opportunities that will provide the best benefit, AECOM partnered with MnDOT to analyze ITS development needs and objectives to identify emphasis areas, strategies to address those areas, and development needs to implement those strategies. The goal of the Strategic ITS Research and Development Plan is to guide future ITS development investments. The plan was developed using an objectives-driven, data-driven process. It started with investigating the level of analysis that has been performed on the Minnesota ITS development objectives. Four objectives were selected for further analysis based on their critical impact to transportation system performance as well as data availability. The analysis facilitated the identification of emphasis areas for ITS research and development as well as potential ITS strategies and countermeasures. A total of 40 ITS strategies and countermeasures were recommended and categorized in five groups: Safety, Work Zones, Freeway Traffic Management, Arterial Traffic Management, and Traveler Information/511.

ITS Deployment Strategy for the Fargo-Moorhead Metropolitan Area

Client Fargo-Moorhead Metropolitan Council of Governments
Contact Wade Kline, Executive Director
Phone (701) 232.3242 ext. 32
Email metrocog@fmmetrocog.org

AECOM worked on the development of an ITS Deployment Strategies Plan based on the ITS Plan that was previously developed for the Fargo-Moorhead Metropolitan Council of Governments. AECOM's role on the project was to develop multiple documents, including a Regional Concept for Traffic Operations (RCTO) which describes how different transportation services will operate with respect to Traffic Operations Center (TOC), Traffic Signal Operations, System Management and Performance, Incident/Event Management, and Transit Operations. AECOM developed a deployment plan and framework to guide enhancements to the existing hybrid TOC and a transition to a different model of a TOC in the future. AECOM also developed a Transit ITS Utilization and Deployment Strategy document for the transit provider in the region (MATBUS). This plan presents an evaluation of the functionality and interoperability of existing and planned Transit ITS deployments and is intended to ensure that MATBUS is maximizing its existing operations related to fixed-route operations (including fare collection), demand response paratransit services, and transit system safety and security. This document lays out a multi-year strategy for implementing transit ITS technology and projects for the region. In addition, AECOM developed strategies for developing and implementing a traveler information program for the region. This plan details the steps for developing the program, projects to implement over the next 5 years, and costs associated with the investment.

Augusta Regional Transportation Study ATMS Master Plan Update

Client Augusta Planning and Development Department

Contact Paul T. DeCamp, Jr., AICP, Deputy Director for Planning and Construction

Phone (706) 821-1796

Email pdecamp@augustaga.gov

AECOM was selected by the Augusta Region Transportation Study (ARTS), the regional Metropolitan Planning Organization (MPO) which is a division of the City of Augusta, to develop an Advanced Transportation Management System (ATMS) Master Plan for the ARTS region. The purpose of the Master Plan project is to update the original ATMS Master Plan completed in 2002. The ARTS region includes a number of unique transportation needs, include mobility related to the Savannah River Site (an industrial complex) and Ft. Gordon (a large military base). The Master's PGA golf tournament held in Augusta each April uses a number of temporary intelligent transportation system (ITS) components to successfully monitor and manage traffic and pedestrians. The recent completion of the I-520 freeway bypass, the deployment of adaptive traffic signal technology on several major arterials, and interest in a traffic control center for Richmond County were several other reasons why the ATMS Master Plan Update was commissioned. In addition, the counties within Georgia had recently approved a transportation-specific funding source that included earmarked money for ITS deployments within the next three years.

AECOM facilitated meetings with stakeholders to solicit input about their transportation needs. Three large stakeholder events were used to provide the opportunity for stakeholders to provide input, learn, and review during the project process. Topics included:

- ITS challenges/issues, needs, and goals
- ITS infrastructure
- TCC staffing and responsibilities
- ITS maintenance staffing and responsibilities
- ITS funding

The input provided was used to develop the ITS architecture, prepare an operational concept for the region, and to develop an ITS project list that addresses the needs of the region. The project list was prioritized by the stakeholders and divided into short-term, mid-term and long-term deployment periods.

Kansas Statewide ITS Architecture

Client Kansas DOT

Contact Shari Hilliard

Phone (785) 296-6356

AECOM worked closely with the Kansas DOT to develop a statewide intelligent transportation systems (ITS) architecture. The Statewide ITS Architecture reflects the current state of the ITS elements deployed and planned as

well as provides a strategic approach to all future Kansas DOT's ITS investment throughout the state. AECOM brought together State DOT planners, engineers and maintenance personnel; city and county planning, engineering, maintenance and public safety personnel; State Patrol; Turnpike Authority; various other state agencies; and representatives of the urban areas throughout the state to develop the Statewide ITS Architecture. Education, outreach, and interagency coordination efforts included a series of stakeholder workshops throughout the state.

As part of the Statewide ITS Architecture, AECOM developed an architecture integration and implementation plan to guide KDOT and participating stakeholders to effectively use the architecture in the planning, design, implementation, and operation stages of ITS systems and projects. An approach for mainstreaming ITS into the transportation planning and project development process was also identified. AECOM also investigated and identified opportunities to further integrate various ITS systems at local, regional and statewide levels.

Omaha-Council Bluffs Regional ITS Architecture Update

Client Metropolitan Area Planning Agency (MAPA)

Contact Brayden McLaughlin

Phone (402) 444-6866 Ext 216

AECOM assisted the Metropolitan Area Planning Agency (MAPA) and stakeholders in the regional to update the Omaha-Council Bluffs Regional ITS Architecture in 2013. The updated Regional ITS Architecture is consistent with the USDOT's National ITS Architecture and be in compliance with the requirements set forth by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). The updated ITS architecture allows MAPA to enhance transportation operations throughout the metropolitan areas in order to make it safer and more efficient. Key elements of the project included:

- Identifying gaps in the previous version of the MAPA Regional ITS Architecture, changes in the region since the development in 2007, and new data that need to be gathered.
- Developing a vision for ITS in the region and identifying needs.
- Developing goals for addressing needs and realizing the vision, and identifying performance measures to quantify progress toward reaching those goals.
- Developing a strategy and method for updating the Regional ITS Architecture to describing the process that will be followed to perform the update.
- Reformatting and updating the existing Turbo Architecture files and supporting documents.
- Reviewing the updated Architecture to identify issues and recommend solutions to make the Architecture a robust, reliable framework for implementing and integrating ITS in the region.
- Creating an executive summary and an ITS architecture maintenance document.

This project utilized the software package Turbo Architecture 7.0 to update the existing data in MAPA's 2007 ITS Architecture.

Iowa Statewide ITS Architecture Update

Client Iowa Department of Transportation
Contact Willy Sorenson, PE
Phone (515) 239-1212

AECOM is working closely with the Iowa DOT to perform a comprehensive update of the statewide ITS architecture. The AECOM team completed a Statewide Multimodal, Integrated ITS Deployment Plan and Statewide ITS Architecture for the Iowa DOT in 2000. AECOM performed an update to the Statewide ITS Architecture in 2004. AECOM continues to provide support and services to the Iowa DOT to maintain the updated Statewide ITS Architecture. The updated Architecture reflects the current state of the ITS elements deployed and planned as well as provides a strategic approach to all future Iowa DOT's ITS investment throughout the state. As part of the Statewide ITS Architecture Update, AECOM has developed a statewide DMS architecture based on the Iowa DOT Statewide DMS Plan. AECOM assisted the Iowa DOT with procuring the DMS, defining concept of operations, developing the DMS control policy and procedures, and integrating the DMS project architectures into the Statewide ITS Architecture.

Ames Area MPO Regional ITS Architecture

Client Iowa Department of Transportation
 City of Ames Public Works Department
Contact Willy Sorenson, PE (IDOT)
 John Joiner, PE (Ames)
Phone (515) 239-1212 (IDOT)
 (515) 239-5165 (Ames)

AECOM supported the Iowa DOT and Ames Area MPO with developing a regional ITS architecture for the Ames Area. This regional ITS architecture supports existing and future ITS projects within the region and enhances the compatibility with emerging national ITS architectures. AECOM performed comprehensive outreach and extensive coalition building as they were elements absolutely critical to the ultimate success of the development of the ITS architecture. The completed architecture ultimately provides a comprehensive framework for communication among agencies, as well as technologies.

Dubuque MPO Regional ITS Architecture

Client Iowa Department of Transportation
 East Central Intergovernmental Association
Contact Willy Sorenson, PE (IDOT)
 Kelley Deutmeyer (ECIA)
Phone (515) 239-1212 (IDOT)
 (563) 556-4166 (ECIA)

Through a contract with Iowa DOT, AECOM assisted the Dubuque MPO with developing a regional ITS architecture for a six-county area. This regional ITS architecture



ITS equipment along a highway

supports existing and future ITS projects within the region and enhances the compatibility with emerging national ITS architectures. AECOM performed comprehensive outreach and extensive coalition building as they were elements absolutely critical to the ultimate success of the development of the ITS architecture. The completed architecture provides a comprehensive framework for communication among agencies, as well as technologies.

Hattiesburg (Mississippi) Regional Architecture Update

Client Mississippi DOT
Contact Mike Stokes
Phone (601) 359-9710

AECOM assisted the Mississippi Department of Transportation (MDOT) with developing a regional ITS architecture for Hattiesburg in 2008, along with developing regional ITS architectures for three other regions (Northwest Mississippi, Central Mississippi and Gulf Coast) and updating the Statewide ITS Architecture. Subsequently MDOT retained AECOM in 2011 to update the Regional ITS Architecture for the Hattiesburg region.

The scope of this project included performing a migration analysis of the existing Regional ITS Architecture; coordinating with an ITS master planning effort that was done concurrently but separately by another firm; conducting stakeholder meetings and workshops to refine the ITS vision and goals for the region and to gather information for updating the architecture. The resulting architecture refined the Operational Concept – stakeholder roles and responsibilities, identified applicable National ITS Standards and the definition of necessary agency agreements, and provided an updated list of projects that should be deployed in the region to achieve the goals set forth by stakeholders. The update to the regional architecture was completed in December 2011.

Mississippi Statewide and Regional ITS Architectures

Client Mississippi DOT
Contact Mike Stokes
Phone (601) 359-9710

The Mississippi Department of Transportation (MDOT) contracted with AECOM to update Statewide ITS Architecture and develop Regional ITS Architectures. Using the National ITS Architecture as a template, the purpose of the Architectures is to guide the deployment of ITS projects throughout the state.

AECOM developed five separate Architecture documents as part of this effort. The updated Mississippi Statewide ITS Architecture serves as the overarching Architecture for the State and is intended to cover the geographical areas within the state of Mississippi that are not covered under the four regional ITS architectures. The four regional architectures include the architectures for the following regions: Gulf Coast, Central Mississippi, Hattiesburg, and Northwest Mississippi.

The scope of this project included stakeholder meetings and workshops held throughout the state to gather information used to draft the Architecture, a migration analysis of the existing Statewide Architecture, the development of the Operational Concept, the identification of applicable National ITS Standards, the definition of necessary agency agreements, and the development of a list of projects that should be deployed throughout the state to achieve the goals set forth in the various Architecture documents. The update to the Statewide ITS Architecture and the regional architectures were completed in 2008.

Southwest Michigan Regional ITS Architecture and Deployment Plan

Client Michigan Department of Transportation
Contact David Van Stensel, Region Emergency Operations Engineer MDOT Southwest Region
Phone (269) 337-3967

AECOM assisted the Michigan DOT with developing a regional ITS architecture and ITS deployment plan for the Southwest Region and a portion of the University Region (Shiawassee and Jackson counties). This project involved developing a training class on the National ITS Architecture, a regional ITS architecture, and a deployment plan that included a project listing, developed through the stakeholder meeting process, planning level project costs, project prioritization and detailed benefits of the project in terms of improved safety, mobility and air quality. AECOM completed a Regional ITS Architecture and an ITS Deployment Plan for the Southwest Region in Michigan in 2008.

Wisconsin DOT District 8 ITS Strategic Deployment Plan

Client Wisconsin Department of Transportation
Contact Phil DeCabooter
Phone (608) 267-0452

The WisDOT District 8 ITS Strategic Deployment Plan was developed with the Wisconsin Department of



ITS elements can range from alerting motorists of potential hazards, to charging stations for electric vehicles.

Transportation to guide deployment of ITS applications throughout the eighth district, a rural region in northwestern Wisconsin. This region faces a growing number of challenges as traffic demand continues to increase. AECOM successfully brought together State DOT District planners and engineers, county maintenance personnel, state patrol, and representatives of the urban areas throughout the region to develop a strategic plan to address this rural area's needs. Education and outreach efforts included a project newsletter sent to stakeholders throughout the corridor. The AECOM Team conducted a stakeholder survey, a system inventory, and a technology assessment and developed a regional architecture.

Gary-Chicago-Milwaukee (GCM) ITS Priority Corridor Program Management

Client Illinois Department of Transportation
Contact Chuck Sikaras
Phone (847) 705-4800

AECOM has been successfully providing program management services for the Gary-Chicago-Milwaukee Corridor since 1995. Services include ITS project development, deployment, and technical management for the GCM Corridor Coalition, including the development of project scopes of work, financial tracking, and work group/committee administration. AECOM manages, coordinates, and provides technical support to nine separate GCM committees and work groups and over 700 Coalition members. As part of the recently completed Program Plan Update, AECOM developed a corridor-wide architecture that captures existing and planned activities for the entire three-state region.

AECOM led a team in the development of a phased, 20-year ITS deployment plan for this national priority corridor and is now supporting corridor-wide deployment activities. Development of the plan included an extensive outreach/participation process consisting of workshops, committee

meetings, agency surveys and interviews. The Program Plan includes a staged implementation plan of specific projects and programs including preliminary cost and staffing estimates. The program includes approximately 100 projects, half of which are currently in various stages of implementation. In short, the GCM program covers the entire systems development life-cycle, encompassing Problems & Opportunities Identification; Existing System Assessment; Concept of Operations/Information Requirements Development; System Design; System Testing & Validation; System Implementation; and System Evaluation and Maintenance. In 1998 the GCM Corridor won the ITS America Award for Outstanding Achievement in Regional and Corridor Programs.

Wisconsin I-90/94 ITS Corridor Program Management and ITS Architecture

Client Wisconsin Department of Transportation
Contact Phil DeCabooter
Phone (608) 267-0452

AECOM developed the original ITS Intercity Strategic Plan for the I-90/94 Corridor in Wisconsin and provided management support for ITS project deployment in the corridor. AECOM's responsibilities included support of committee and work group activities, technical support, the development of an incident management plan and a regional architecture, identification of ITS standards affecting selected projects, outreach and education, and promotion of public/private partnerships.

AECOM provided quarterly reports to the Wisconsin Department of Transportation. AECOM regularly provided the committees with information on emerging technologies and ITS program success stories from other jurisdictions. AECOM was responsible for tracking the progress of individual projects within the corridor.

Together with the development of the original plan, these efforts also covered the entire systems development life-cycle, encompassing Problems and Opportunities Identification; Existing System Assessment; Concept of Operations/Information Requirements Development; System Design; System Testing and Validation; System Implementation; and System Evaluation and Maintenance.

Fresno County ITS Strategic Deployment Plan Update

Client Fresno Council of Governments
Contact Peggy Arnest, Senior Regional Planner
Phone (559) 233-4148 ext. 241
Email parnest@fresnocog.org

AECOM was selected by the Council of Fresno County Governments (Fresno COG) to lead the development of their ITS Strategic Deployment Plan (SDP) for Fresno County in 1998. The ITS SDP for the County was completed in 2000. Fresno COG retained AECOM in 2013 to update the SDP.

The updated Fresno County ITS SDP was completed in November 2015. The ITS SDP addresses the expanded realm of ITS in Fresno County and responds to specific recommendations and requirements to bring the Fresno COG into compliance with current ITS program standards (23 CFR 940) set by the Federal Highway Administration (FHWA) for development of architecture and strategic plans as well as the Federal Transit Administration's National ITS Architecture Policy on Transit Projects. Furthermore, the SDP provides a vision for ITS, outlines a program of low, medium and high priority projects, identifies a funding strategy, and establishes a plan for managing, integrating, operating, and maintaining the ITS elements in the region that are to be implemented over a 20-year horizon.

Fresno County ITS Strategic Deployment Plan

Client Fresno Council of Governments
Contact Peggy Arnest, Senior Regional Planner
Phone (559) 233-4148 ext. 241
Email parnest@fresnocog.org

AECOM was selected by the Council of Fresno County Governments (Fresno COG) to lead the development of their ITS Strategic Deployment Plan for Fresno County. This 18-month effort was completed in June 2000. The AECOM Team worked closely with COFCG and the Regional ITS Steering Committee to develop a comprehensive SDP which properly integrated the capabilities of ITS with local and regional transportation needs. Fresno County represents a unique blend of urban and rural land uses and transportation demands. The AECOM Team defined user needs, system architecture options, and regional deployment opportunities. Special focus groups were established to address the potential application of ITS to special areas of concern such as emergency management services and tourism/business. The project included an extensive outreach and consensus building process developed based on AECOM's past experiences. Various groups included in project development included Caltrans, Fresno COG, local traffic engineers, regional/local transit operators, CHP, local police, commercial vehicle operators, air pollution district, and numerous other transportation stakeholders. In addition to the normal tasks associated with the strategic planning process, such as: defining user service objectives, prioritizing user services, identifying functional requirements, and providing for an implementation plan, AECOM worked closely with Fresno COG and Caltrans to ensure that the strategic planning process would translate into a continuing planning, design, and deployment effort.

Illinois Statewide ITS Strategic Plan

As a subconsultant, AECOM assisted in the development of a statewide strategic plan to deploy and integrate ITS technologies in Illinois to improve traffic system performance and operations. This strategic plan will guide Illinois DOT in deploying resources in a comprehensive



Interstate 10 and 110 Intelligent Transportation System in Los Angeles, CA

manner to address transportation issues around the state. The plan outlined the high priority transportation needs in the state and recommended how to deploy projects to address these needs in a manner that best uses available resources. AECOM assisted in the technical review outreach workshops and development of the ITS Strategic Plan.

Columbus County (Indiana) Regional ITS Architecture

AECOM worked closely with representatives from Columbus, IN and Bartholomew County agencies to develop their Regional ITS architecture. The work product reflects the current state of the ITS elements both deployed and planned. It also provides a strategic approach to all future ITS investment throughout the County. AECOM brought together planners, engineers and maintenance personnel; City and County planning, engineering, maintenance and public safety personnel; State Police; various other state agencies; and key representatives of the urban area to develop the Regional ITS Architecture. Education, outreach, and interagency coordination efforts included a series of workshops with key personnel.

Oshkosh/Fox Cities/Green Bay ITS Strategic Deployment Plan

The ITS Strategic Deployment Plan presents a 10-year strategy for improving the Oshkosh/Fox Cities/Green Bay transportation system through the application of Intelligent Transportation Systems technologies. The plan was the culmination of a one-year planning process, led by the Wisconsin Department of Transportation District 3 with substantial contribution and input from numerous local agencies within the corridor. Stakeholder input

and interagency cooperation—resulted in a clear plan for improving the safety and efficiency of travel in the Oshkosh/Fox Cities/Green Bay area. The plan guided ITS deployment in the region and provided a framework for future efforts. Project deliverables included a system inventory, a detailed 10-year implementation plan, an assessment of available technologies, and incident management plan, and a regional ITS architecture.

San Joaquin Valley ITS Strategic Deployment Plan and Regional Architecture

AECOM was selected by the San Joaquin Council of Governments (SJCOG) to lead the development of their ITS Strategic Deployment Plan for an eight County area of the central part of California. This 20-month effort began in August 2001. The AECOM team worked closely with the SJCOG and the Valleywide ITS Steering and Technical Advisory Committee to develop a comprehensive SDP which properly integrated the capabilities of ITS with local, regional and statewide transportation needs. The Central Valley Counties represent a unique dichotomy of urban and rural land uses and transportation demands. AECOM defined user needs, system architecture options and regional opportunities. Special focus groups were established to address the potential application of ITS to special areas of concern such as incident/emergency management services, urban area traffic management, rural ITS Applications, traveler information, goods movement/trucking and the concerns of the tourist businesses. AECOM undertook an extensive outreach effort to educate stakeholders and build consensus on project implementation. This was the first project to use both the National ITS Architecture and the Statewide Deployment Plan at a regional level. There were countywide

architectures developed for all eight counties and an overarching regional architecture implemented that defined internal and external interfaces within the region. This was the first California project to use both the National ITS Architecture and the CA Statewide Deployment Plan at a regional level. It was also the first architecture in California to be approved as compliant with the FHWA federal rule on architecture.

Iowa Statewide ITS Strategic Plan

AECOM prepared a multi-modal, integrated ITS deployment plan for the state of Iowa. One of the challenges posed by the study, and successfully met by the AECOM Team, was the identification of recommended ITS projects for the current fiscal year within just six months of the start of the study. This challenge was met through the use of a dual-track process, where intensive stakeholder outreach and “early winner” analysis was used to identify project for immediate initiation, while recommendations for the remainder of the ten-year planning horizon were developed over time, in conjunction with the specification of a nationally compatible ITS system architecture and a second round of stakeholder participation. The effort to identify project for immediate implementation was very successful—all of the project were approved and funded by the Iowa DOT Commission. Another project challenge successfully met was that the plan must recommend a process and organizational structure for ongoing ITS planning and deployment—a process that must successfully balance urban and rural interests, research with proven winners and highways with transit and other alternative modes. The process and structure developed to achieve these objectives proposes a clear, defensible project evaluation process—linked directly to the strategic plan—and a new ITS staff position. The Statewide ITS Coordinator would provide focus and foster overall program direction and coherence across modes and divisions. Responsibility for ITS project development, implementation and operation would rightly remain with the divisions responsible in these areas, who would participate in on-going ITS strategic planning and funding decisions through and ITS committee and working groups.

AECOM demonstrated flexibility in working with a broad base of stakeholders from throughout the state of Iowa.

Colorado Statewide and Regional ITS Architectures

AECOM developed the regional ITS architectures for the six CDOT regions as well as a statewide ITS Strategic Plan Update and Architecture. AECOM was responsible for compiling all completed information for the Plan, reviewing and expanding upon the planned and proposed ITS projects, categorizing and organizing these projects, as well as developing deployment and management elements for the Plan. The regional and statewide architecture met all federal requirements and included the implementation and maintenance plan and development of statewide agreements and Memorandums of Understanding.

Southern California Association of Governments (SCAG) Regional Strategic Plan and ITS Architectures

AECOM was a major subconsultant for the development of the Regional ITS architecture for the six-county planning region. The project included the development of ITS project plans and a countywide architecture for the Counties of Ventura, Los Angeles, Orange, Riverside, San Bernardino and Imperial. AECOM was responsible for the architecture development of the Imperial and Orange County plans, including compiling all completed information for the Plan and architectures, reviewing and expanding on the proposed local and regional ITS projects, categorizing and organizing these projects, and developing deployment and maintenance elements for the Architecture Plan. Projects included infrastructure, systems integration, and regional integration efforts in the traffic, signal, transit, traveler information, and emergency service areas. AECOM also assisted in specific components of the other four regions and provided support on the regional architecture effort. The subsequent regional architecture was developed and approved by all six regions within a four-month schedule in time to gain FHWA approval by the April 2005 deadline set forth in the federal rule.

SCAG Transportation Security Study and Regional ITS Architecture

AECOM was the prime consultant for the development of the Transportation Security Study and Regional ITS architecture update for the six-county planning region. The project included the development of ITS project plans and a countywide architecture update for the Counties of Ventura, Los Angeles, Orange, Riverside, San Bernardino and Imperial. AECOM was responsible for the architecture development of the Imperial and Orange County plans, including compiling all completed information for the Plan and architectures, reviewing and expanding on the proposed local and regional ITS projects, categorizing and organizing these projects, and developing deployment and maintenance elements for the Architecture Plan. Projects included infrastructure, systems integration, and regional integration efforts in the traffic, signal, transit, traveler information, and emergency service areas.



ITS signage provides important information to drivers

Similar Project Experience

To further expand on the ITS qualifications we have shown in the preceding pages, we have also provided further details on several of our team's successful local and regional projects. Our project experience demonstrates our ITS expertise, as well as our history of success in managing transportation and traffic projects locally in the central Kentucky area.

Lexington Area ITS Architecture Lexington, Kentucky

Owner

Lexington Fayette Urban
County Government

Lexington Area Metropolitan
Planning Organization

Project Cost

\$77,250

AECOM Key Personnel

Paul Slone, PE, PTOE
Vanessa Nghiem, PE, PTOE
Ming Lee, PhD, PE
Dan Nelson, AICP
Dan Shamo, PE
Eddie Mesta, PE (*Integrated
Engineering*)

Owner Contact Info

Max Conyers, MPO Director
& Transportation Planning
Manager
(859) 258-3167
maxc2@lexingtonky.gov

Project Duration

2014-2015

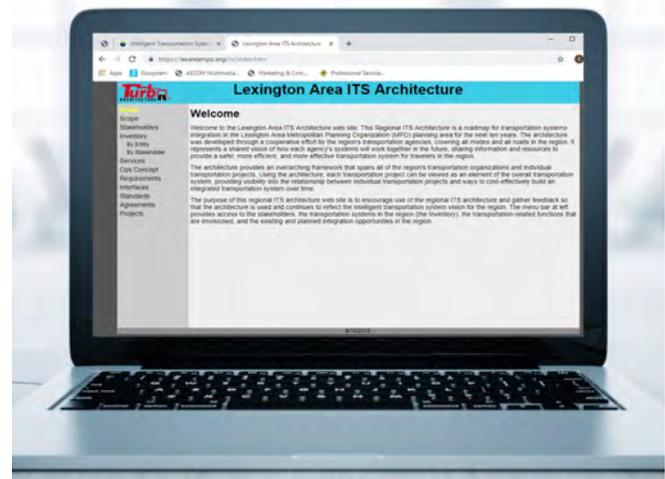
AECOM updated the ITS Architecture for the Lexington Area recently in 2014-2015.

Under a contract with the Lexington-Fayette Urban County Government, AECOM updated the Lexington Area ITS Architecture that covers the Lexington Area Metropolitan Planning Organization planning areas in Kentucky. AECOM conducted two stakeholder meetings along with a stakeholder survey to gather stakeholder needs, to gain a better understanding of the current ITS deployment and capabilities, and to develop future ITS projects to address the regional needs. Turbo Architecture software was utilized to document the existing and planned ITS technologies and projects.

AECOM produced an architecture report that includes technical details of the architecture, use of the architecture for project development, and maintenance procedures to keep the architecture up-to-date. A website was also developed to assist regional stakeholders to navigate the architecture. AECOM also developed an executive summary as a standalone document that provides the intent and purpose and highlights the key usage of the architecture and its relationship to transportation planning and operations. The executive summary is suitable for agency executives and non-technical audience.

The Regional ITS Architecture developed by AECOM helps to accomplish the following objectives for ITS deployment in the region:

- Facilitating stakeholder coordination and cooperation in ITS planning, deployment and operations



- Reflecting the current state of ITS planning and deployment
- Providing high-level planning for enhancing regional transportation systems using ITS technologies
- Conforming with the National ITS Architecture and the FHWA Final Rule and FTA Final Policy on ITS Architecture and Standards

The Regional ITS Architecture for the LFUCG areas describes coordination of overall system operations by defining connections among systems and agencies. It identifies existing ITS deployment and how these systems interact and integrated with each other. It also builds on the existing systems and recommends additional systems and components deemed necessary to grow the ITS systems in the region over a 10-year horizon to accommodate specific needs and issues of regional stakeholders.

NOACA Regional ITS Architecture Comprehensive Update Northeast Ohio

Client

Northeast Ohio Areawide
Coordinating Agency (NOACA)

Project Costs

\$200,000

AECOM Key Personnel

Ming Lee, PhD, PE
Dan Nelson, AICP

Client Contact

Brian Blayney, Project Manager
(216) 241-2414, Ext.302
BBlayney@mpo.noaca.org

Project Duration

2018-2019



AECOM updated the Regional ITS Architecture and ITS Strategic Plan for the Cleveland, OH Metropolitan Planning Organization in 2018 and 2019.

Under a contract with the Northeast Ohio Areawide Coordinating Agency (NOACA), AECOM updated the previous 2010 Regional ITS Architecture and Strategic Plan that covers the Cleveland, OH metropolitan area covering five counties in northeastern Ohio. AECOM conducted two rounds of stakeholder workshops in which stakeholders from all five counties were engaged in group discussions on stakeholder needs with respect to transportation issues throughout the region.

Surveys were developed to gather stakeholder needs and to gain a better understanding of the current and planned ITS deployments and capabilities throughout the region. AECOM performed a comprehensive assessment on the region's needs, gaps and opportunities. The assessment and the feedback from stakeholders guided the development of future ITS projects to address the regional needs and gaps in ITS. AECOM coordinated with federal, state, regional, and local agencies that are responsible for ITS elements as part of the stakeholder outreach efforts.

The most recent version of ITS architecture software, known as Regional Architecture Development for Intelligent Transportation (RAD-IT) was utilized to document the existing and planned ITS technologies and projects. This software provides AECOM with the ability to draw from the recent updates made to the National Reference ITS



Architecture now referred to the Architecture Reference for Coordinated and Intelligent Transportation (ARC-IT). AECOM produced an architecture report that includes technical details of the architecture, use of the architecture for project development, and maintenance procedures to keep the architecture up-to-date. A website was also developed to assist regional stakeholders to navigate and use the architecture.

AECOM also worked with team members to update the Regional ITS Strategic Plan for the NOACA region, which presents a short term, medium term, and long term set of ITS projects for the stakeholders within the region. AECOM presented the results of the overall project to an ITS Steering Committee developed to oversee the project with NOACA in August 2019.

Regional ITS Architecture Update & Strategic Plan Framework

Ohio, Kentucky, Indiana Counties

Client

Ohio-Kentucky-Indiana
Regional Council of
Governments (OKI)

Project Costs

\$25,000

AECOM Key Personnel

Vanessa Nghiem, PE, PTOE
Ming Lee, PhD, PE
Dan Nelson, AICP
Dan Shamo, PE

Client Contact

Andy Reser, TIP Manager
(513) 619-7688
areser@oki.org

Project Duration

2016



AECOM assisted the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) with updating their 2008 Regional ITS Architecture and ITS Strategic Plan to reflect the current and future ITS elements and projects in the OKI region.

In February 2016, AECOM developed and distributed a stakeholder survey for regional agencies to indicate their highest priority ITS needs and comment on existing and planned ITS projects. AECOM gathered survey feedback and reviewed the previously developed regional ITS architecture to assess any updates that would need to be made based on stakeholder input and comments.

AECOM utilized Turbo Architecture Software in March and April 2016 to update the previously developed Regional ITS Architecture and bring it in compliance with the most recent version of National ITS Architecture. Survey responses gathered from stakeholders were utilized to document the existing and planned state of ITS deployment in the region, and to ensure conformance with the National ITS Architecture



and FHWA Final Rule 940 and FTA Final Policy on ITS Architecture and Standards.

AECOM then conducted a stakeholder workshop in May 2016 to present survey results and to present the updated Regional ITS Architecture for stakeholder review and discussion. To facilitate the group discussion at the workshop, AECOM developed an ITS Architecture website to assist stakeholders in understanding how the existing and planned ITS elements were attributed to their respective agencies in the region, as well as how their ITS elements are interconnected and integrated at the local, regional and statewide levels.

Based on the comments gathered from stakeholders, AECOM updated the Final Report that documents the Regional ITS Architecture and ITS Strategic Plan. The ITS Strategic Plan was updated to reflect short, medium, and long term ITS projects for the OKI region. AECOM also developed an Architecture Maintenance and Use Plan to provide guidance to OKI staff on how to properly update and maintain the Architecture as ITS projects are completed and new ITS projects are developed over time.

Hamburg Corridor Traffic Signal Retiming

Lexington, Kentucky

Owner

Lexington Fayette Urban
County Government

Project Cost

\$39,000

AECOM Key Personnel

Vanessa Nghiem, PE, PTOE
Paul Stone, PE, PTOE

Owner Contact Info

Jeff Neal
jneal@lexingtonky.gov

Project Duration

Dec. 2018 - May 2019



AECOM was a subconsultant responsible for developing four weekend timing plans for the Hamburg Corridor in Lexington.

The corridor included 23 intersections on three major routes, Winchester Road, Sir Barton Way, and Man o' War Boulevard. This project was unique compared to most traffic signal retiming projects. The weekend traffic volumes and flow patterns contrast starkly with average weekdays. The variety of land uses such as retail, office, residential, hotels, restaurants, entertainment venues, and churches make the Hamburg area a city unto itself. As a large retail center, Hamburg is a significant regional attraction and has high seasonal variability.

This was one of the most advanced traffic signal retiming projects performed in Kentucky to date. Project highlights include:

- Programming 2070 controllers with the new Intelight firmware
- Working remotely through a secure VPN connection with Intelight's MaxView central server platform to:
 - Program controller databases
 - Perform field adjustments to timing parameters and schedules
 - Setup traffic responsive operation
 - Used split monitor and other tools to assess system performance
- Developed locations for system detectors
- Utilized TruTraffic software to assist with field adjustments.

- Before/After evaluation performed using Inrix, a third-party transportation data analysis platform

The project team developed resilient plans and worked to setup traffic responsive operation at the end of the project to allow the system server to choose the best plan for the prevailing traffic conditions. The project area was broken into two zones with independent schedules and timing patterns. In both subnetworks, shorter cycle length patterns were developed for the morning and evening hours, while longer cycle lengths were proposed on Man o' War Boulevard for the peak shopping times (mid-day and afternoon) on Saturday.

The desired outcomes for the new timing patterns included:

- Reduce or eliminate in the number of cycle failures on Sir Barton Way approaching Man o' War Blvd.
- Create balanced, bi-directional progression on all routes
- Reduce side street delays
- Goal v/c ratio of 0.8 to 0.85, where practical, to reserve capacity for random spikes in traffic volume.

The project greatly improved performance on the worse roadway segment in the corridor; Sir Barton Way at Man o' War Boulevard. The time to exit the development at Man o' War Boulevard was reduced by more than 100 seconds through repeated simulation and field experimentation of different phasing sequences to most efficiently move traffic. Other performance improvements documented by the Inrix data also included greater system reliability, improved travel time, and more uniform speeds reported for most of the weekend.

KYTC District 7 Traffic Engineering Services

Traffic Signal Timing & Design

Client

Kentucky Transportation
Cabinet

Project Duration

2007-Present

Project Costs

\$354,433 (2017-2019)

Services

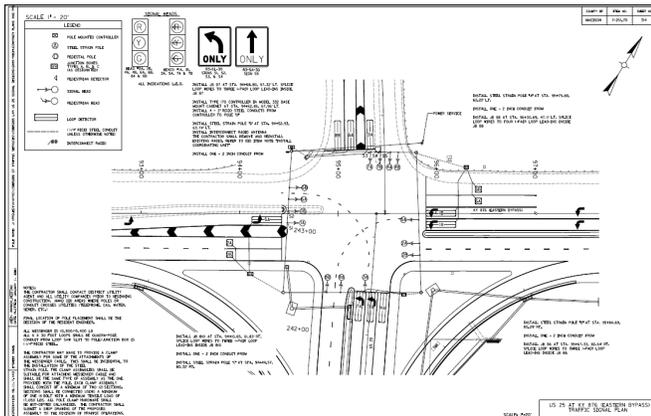
Traffic Engineering
Signal System Design
Traffic Studies
Signal Design/Staff
Augmentation

AECOM Key Personnel

Vanessa Nghiem, PE, PTOE
Bill Madden, PE, PTOE
Paul Slone, PE, PTOE

Client Contact

Natalia McMillan, PE
Project Manager
District 7
KY Transportation Cabinet
859.246.2355



AECOM has been fortunate enough to work with District 7 on the Traffic Engineering Services contract since 2007. AECOM has provided as-needed services such as signal retiming, data collection, various traffic studies related to signalized intersections, and signal design.

One of the widely used tasks under this contract has been the evaluation and retiming of signal systems throughout District 7. To date, AECOM has worked on 16 signal systems. In some cases, we are beginning to revisit systems we timed several years ago and updating the timing. Most recently, AECOM worked on the Winchester Bypass (KY 1958). This is one of the systems the AECOM staff had worked on previously, but there have been geometric changes as well as a need to update timing to meet current policies. The intersection of US 60 and KY 1958 proved to be particularly challenging as the timing was using overlaps to accommodate lead lag left turns. This safeguarded against the left turns ever overlapping (which was a safety concern due to the left turn lanes' geometric constraints). Since AECOM had last worked with the system, a second turn lane had been added which required the timing change. District 7 and Central Office Traffic staff had worked on the timing but still saw inconsistencies in performance. When AECOM began work on new signal timing, it became a goal of the project to improve operation at this intersection specifically and eliminate inconsistencies. The AECOM staff worked collaboratively with District 7 and Central Office Traffic Operations in order to find a solution to the nagging issues

and improve performance at the intersection. This type of hands on interaction and working together is a result of the familiarity and experience AECOM has with KYTC traffic personnel in Lexington and Frankfort.

For each signal system timing assignment, AECOM provides a comprehensive report outlining the conditions of the system, including GPS travel time information collected before and after the new timing is implemented by AECOM. This type of data allows the District to have a tangible measurement of the positive impact of the new timing through reduced delays, reduced stops, and increased travel speeds.

In addition to signal design and signal system timing, the majority of the letter agreements on the previous District 7 Traffic Engineering Services Contract have been traffic studies. In the past ten years of working on the contracts, AECOM has studied 225 intersections. Common requests include signal warrants, left turn phases and protected left turn phases. AECOM can provide quick turnaround on these studies, often completing the assignment of several intersections within a month. AECOM utilizes its Miovision traffic counters or employs the help of team member, Cummins Consulting Services, to collect traffic turning movement data required. 12 hours are collected in the case of signal warrants and peak hour counts for phase requests. In addition to the data collection, a field visit is performed to fully understand the site and its unique situation. Often, a real world look exposes issues you cannot evaluate from a computer screen.

KYTC District 7 Traffic Engineering Services

Traffic Engineering Studies

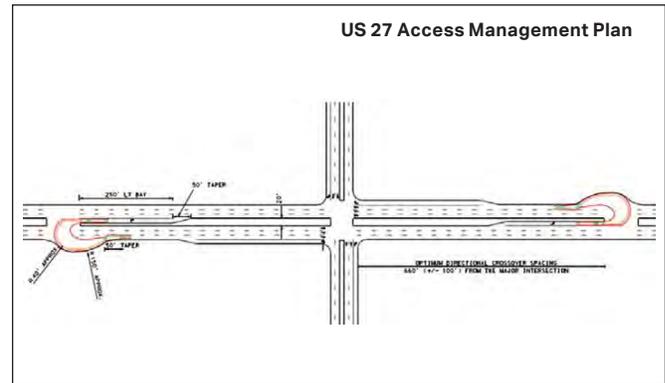
Client
Kentucky Transportation Cabinet

Project Duration
2007-Present

Services
Signal System Design
Traffic Studies
Signal Design

AECOM Key Personnel
Vanessa Nghiem, PE, PTOE
Bill Madden, PE, PTOE

Client Contact
Natalia McMillan, PE
Project Manager
District 7
KY Transportation Cabinet
859.246.2355



In addition to signal design and signal system timing, the majority of the letter agreements on the previous District 7 Traffic Engineering Services Contract have been traffic studies. In the past ten years of working on the contracts, AECOM has studied 224 intersections and completed four special studies.

AECOM has reduced the burden for the District staff by aiding in the evaluation of intersections. Common requests include signal warrants, left turn phases and protected left turn phases. AECOM can provide quick turnaround on these studies, often completing the assignment of several intersections within a month. AECOM utilizes its Miovision traffic counters or employs the help of team member, Cummins Consulting Services, to collect traffic turning movement data required. 12 hours are collected in the case of signal warrants and peak hour counts for phase requests. In addition to the data collection, a field visit is performed to fully understand the site and its unique situation. Often, a real world look exposes issues you cannot evaluate from a computer screen. Crash data provided by the District is compiled and summarized. If no change is recommended, AECOM provides the District with a note to file as to why no change was recommended. If there is a recommended change, AECOM will provide a letter the District can review and send directly to Central Office staff for approval.

Under the lifetime of the contract, AECOM has performed 4 special studies for District 7:

- 1. US 27 Access Management Plan.** Tasked to study the US 27 Corridor from Man o' War Boulevard in Fayette County, southward, to the northern access control line of the proposed East Nicholasville Bypass in Jessamine County. The primary goal was to establish a specific set of access permitting guidelines to be accepted and enforced by multiple agencies that have funding or land use decision making power in the corridor. This establishes both a common vision for the future, enhances safety and improves long term traffic operations. Strategies included controlling access locations, utilizing U-turn and loon intersections and constructing quadrant intersections. AECOM is currently working on the first design phase of this project.
- 2. Man O' War Small Area Study.** Tasked by the KYTC District 7 staff and LFUCG to develop short-term and long-term improvement projects for the Man O' War Small Area in the vicinity of I-75 on the east side of Lexington, KY. This study involved large amounts of data collection to define the existing situation and evaluate which areas suffered the most severe traffic congestion. Alternatives range from short term, relatively low cost "quick fix" types to long term, and more costly options.
- 3. Winchester Road (US 60) Corridor Study.** Cross sectional analysis of corridor in order to determine the best use of the existing pavement width for turn lanes in advance of repaving. AECOM provided striping plans.
- 4. Bluegrass Community Technical College Traffic Impact Study.** Examined the anticipated impacts of the proposed campus and identified necessary improvements to Newtown Pike.

Town Branch Commons Program Management Services Lexington, KY

Client

Lexington-Fayette Urban
County Governments (LFUCG)

Project Duration

2015-Ongoing

Overall Value

\$25 million

Fee value

\$2.3 million

AECOM Key Personnel

Greg Groves, PE
Brian Meade, PE
Kevin Dant, MBA
Terri Combs, PE
Jason Ramler, PE
Megan Bennett Yuill, AICP Cndt.

Client Contact & Reference

Brandi L. Peacher, Director of
Project Management, Office of
the Mayor, LFUCG
200 East Main Street
Lexington, KY 40507
(859) 258-3150
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AECOM is providing program management and general engineering services to the City of Lexington for The Town Branch Commons project in Lexington, KY.

The project runs through the heart of downtown Lexington from the intersection of Midland Avenue at 3rd Street in the east (near the Isaac Murphy Memorial Art Garden), through the downtown Central Business District, through the Rupp Arena District and into the Distillery District to the west. The project calls for a 2.5 mile multi-modal path and park system that will wind through downtown Lexington, following the path of the historic Town Branch Creek. The project is being funded with multiple funding sources including local, federal and private partnerships. The overall project costs are approximately \$75 million including the corridor streetscape and the proposed park system (privately funded).

Our role as Program Manager for the City began in late 2015 and included six (6) work orders for Project Management Plan, Surveying, Environmental Documentation (NEPA), Grant Management, Utility Coordination and Community Engagement. Within the framework of the initial contract AECOM to prepared a TIGER Grant application on behalf of the City.

In July, 2016 the City was notified that they were a recipient of the TIGER Grant in the amount of \$14.1 million. Subsequent to the TIGER Grant award, AECOM prepared the RFP for design services and a consultant was selected in November 2016.

The schedule for this project has an aggressive schedule due to the TIGER Grant monies. The Preliminary Design (Phase I) of the project was completed in June 2017 with the Final Design (Phase II) to be completed in May 2019. The Construction Phase of the project is scheduled to begin in November 2019 and the project is to be completed and opened to the public in early 2022.



AECOM understands what it takes to deliver a project. Serving as our Program Manager for the Town Branch Commons project they have been instrumental in managing and coordinating the activities necessary to move the project to construction. Their knowledge of KYTC processes and procedures has been a great benefit to LFUCG.

Brandi L. Peacher, Director of Project Management
Office of the Mayor
City of Lexington



KYTC Statewide Traffic Engineering Services

Kentucky

Client

Kentucky Transportation Cabinet

Project Duration

2007-Present

Project Costs

\$125,527 (2017-2019)

Services

Traffic Engineering
 Traffic Signal Timing
 Signal Systems Evaluation
 Intersection Inventories
 Data Collection
 - Travel Time
 - Traffic Volumes

AECOM Key Personnel

Vanessa Nghiem, PE, PTOE
 Bill Madden, PE, PTOE
 Paul Slone, PE, PTOE

Client Contact

Telma Lightfoot, EIT
 Project Manager
 KY Transportation Cabinet
 502.564.3020

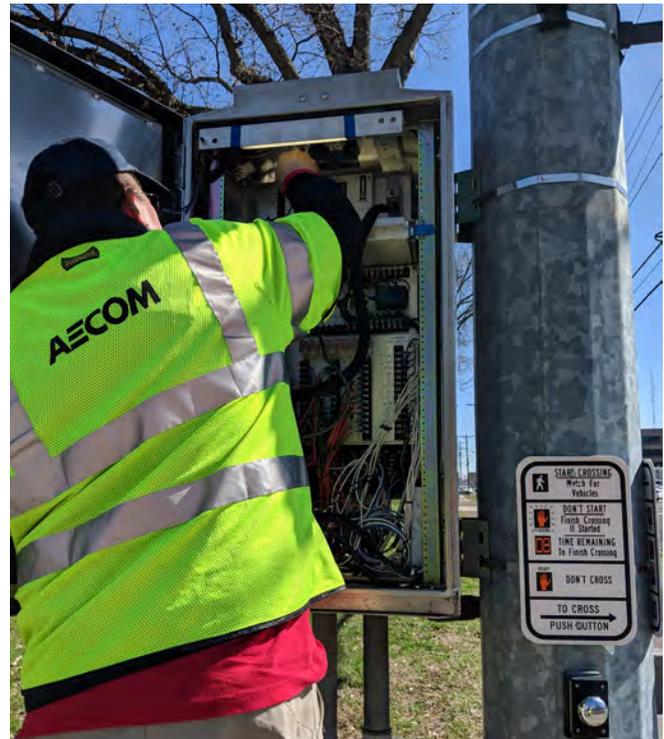


AECOM has delivered as-needed traffic engineering services to KYTC on a statewide level for six consecutive two-year periods.

The services provided on this contract primarily involve operational evaluation of assigned closed loop traffic signal systems. Upgrading of signal system timing, if necessary, is also performed. Since the initial selection in 2007, AECOM has evaluated and/or made recommendations for improvements to **30** different signal systems in Districts **1, 2, 4, 5, 6, 7, 8, 9, 11 and 12**.

Most of the work performed involved the evaluation of existing signal systems. As part of the evaluation AECOM provided survey, drawing, and intersection equipment inventories as future documentation for both the District Office as well as the Central Office. New timing plans were developed for areas such as Elizabethtown, Ashland, Crestview Hills, Florence, Maysville and Covington. In some other areas, AECOM provided value added services by making small recommendations for improving traffic flow without a major modeling effort or development of new timing plans.

The AECOM team provides a hands-on approach with this contract. AECOM personnel download timing in the field and verify that the system is running as designed.



AECOM also conducts travel time studies before and after implementation using GPS and the "floating car" method to measure improvements made to each system. Results of the project are submitted in a written report that documents the improvements made, and the amount of resources saved.

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AECOM Project Team Key Personnel



The AECOM Team possesses the subject matter expertise, relevant experience, and strong, proven approach necessary to successfully support the LAMPO, LFUGG Department of Public Works, Kentucky Transportation Cabinet (KYTC), and other stakeholders in updating the Regional ITS Architecture.

The AECOM Team includes AECOM and Integrated Engineering, Inc. (IE), a certified Disadvantaged Business Enterprise (DBE) with KYTC. The AECOM Team's DBE participation for this project is expected to be 10 to 15%.

Our team brings a unique blend of local knowledge and national ITS Architecture expertise to this project. Our familiarity with the LAMPO ITS Architecture is unmatched as AECOM assisted LAMPO with the update process in 2015. We will lead the stakeholders through a process to update the architecture, and tie it into statewide, regional and local transportation goals, objectives, and needs. Our organizational approach, proven on other local projects such as the Town Branch Commons and the 2015 ITS Architecture Update, provides the LAMPO and stakeholders with the necessary information to make effective decisions for this policy document. Our familiarity with many of the stakeholders will greatly benefit the project process. Our project manager, Vanessa Nghiem, will lead the stakeholder meetings. Her approach will be similar to that used during the previous update, delivering technical information in a relaxed, comprehensible format, and providing stakeholders the knowledge base to understand the technologies, deployments and benefits of ITS.

A charter member of ITS America, AECOM has led hundreds of ITS planning, design and/or deployment efforts around

the nation. Our Midwest offices offer a combined staff of over 5000 personnel, including planners, engineers, environmental scientists, and economists with proven expertise in the areas of ITS planning, system design, communications, and deployment and operations.

AECOM understands the interactions between transportation planning and transportation operations. We have direct, hands-on experience applying Federal Highway Administration (FHWA) guidance on developing an objectives-driven, performance-based approach to incorporating the ITS architecture update and planning for operations.

Locally and nationally, AECOM caters to a diverse clientele that includes governmental agencies at local, county, state, and federal levels as well as private and corporate entities. We take great pride in our reputation as an industry leader in ITS, known for providing innovative and consistently high-quality professional and technical services.

AECOM is pleased to present the specialized experience and technical competence of the team on the following pages. Our local project manager, Vanessa Nghiem, PE, PTOE has worked closely with many local stakeholders. Supporting Vanessa on this project, Dr. Ming-Shiun Lee, our proposed technical lead, is the AECOM ITS architecture expert and has led more than 40 ITS architecture and deployment planning projects.

This project will be led from our Louisville and Cincinnati offices, with assistance from our Indianapolis and Minneapolis offices. The Minneapolis Office is one of our hubs for our ITS Architecture work with staff readily available to perform the necessary services described in this proposal. The traffic / ITS engineers have the experience and skills to perform all types of traffic engineering projects within the Commonwealth of Kentucky. One-page resumes are included for the staff directly following our proposed organizational chart.

PROJECT MANAGER—Vanessa Nghiem, PE, PTOE

Vanessa is the Traffic Department Manager for Kentucky and Ohio. She has gained significant experience over the last 15 years on other traffic signal retiming projects in Louisville, Lexington, and Ohio. She was the PM on the 2015 Lexington Area ITS Architecture Update and participated in the OKI ITS Architecture Update. Her experience also includes transportation analysis, traffic signal design and Blue Tooth data collection technology. Vanessa is a certified AECOM Project Manager, and leads a team of seven traffic engineers.

**QUALITY—Paul A. Slone, PE, PTOE**

Paul has over 27 years of experience in Traffic Engineering and Planning. He was the project manager for the 2015 Lexington Area ITS Architecture Update during the first months of the project. Paul has managed the Lexington Traffic signal study for LFUCG; managed the CMAQ project US 42 / Weaver Road Improvement project for KYTC District 6; and was the Principal in Charge for the KYTC District 7 Traffic Engineering Support Services Contract and the KYTC statewide traffic engineering contract. The US 27 Access Management Plan was developed under the District 7 Traffic Contract. He is well versed in the requirements of public involvement and stakeholder meetings. Paul will use his experience and expertise to provide QA/QC and guidance for this project.

ITS ARCHITECTURE DESIGN AND REPORTING LEAD—Ming-Shiun Lee, PhD, PE

As the lead project engineer of AECOM Minneapolis office, Dr. Lee is primarily involved with engineering projects in the Intelligent Transportation Systems (ITS) and Traffic Engineering areas. He has over 24 years of experience in the areas of program management, ITS planning and architecture, design and implementation, systems engineering, advanced traffic management systems (ATMS), active traffic management (ATM), transportation systems evaluation, traffic modeling and simulation, and signal design and analysis. He is AECOM' technical leader in the field, and has completed designs across the Midwest including Minnesota, Iowa, Michigan, Indiana and Illinois. He was also in this role during the 2015 Lexington Area ITS Architecture update.

ITS ARCHITECTURE PLANNER—Dan Nelson, AICP

Dan is an ITS planner in the Minneapolis office. He has worked with multiple public sector agencies on the application of all steps of the systems engineering process to multiple ITS projects for state departments of transportation and multiple public transportation agencies. He served in this role during the 2015 Lexington Area ITS Architecture update.

SENIOR ITS ADVISOR—Daniel E. Shamo, PE

Dan has an extensive background in transportation engineering and project management. His areas of expertise include Intelligent Transportation Systems (ITS) and Traffic Operations. His experience includes establishing the current Intelligent Transportation System (ITS) initiatives for the Indiana Department of Transportation. His work with the Gary-Chicago-Milwaukee Priority Corridor (GCM) program significantly influenced the ITS planning efforts across Wisconsin, Illinois and Indiana. While at INDOT, Dan was one of the founders of the GCM Corridor program. Along with promoting a significant number of ITS initiatives, part of this work established the development of several regional and statewide ITS Architectures for the three states involved. After leaving INDOT and joining AECOM Corporation, he continued his involvement with the GCM Corridor as the Executive Director.

Partner Firm—Integrated Engineering

AECOM will be supported locally by Integrated Engineering, PLLC (IE). They are a KYTC-Certified DBE and are located in Lexington at 166 Prosperous Place, Suite 220.

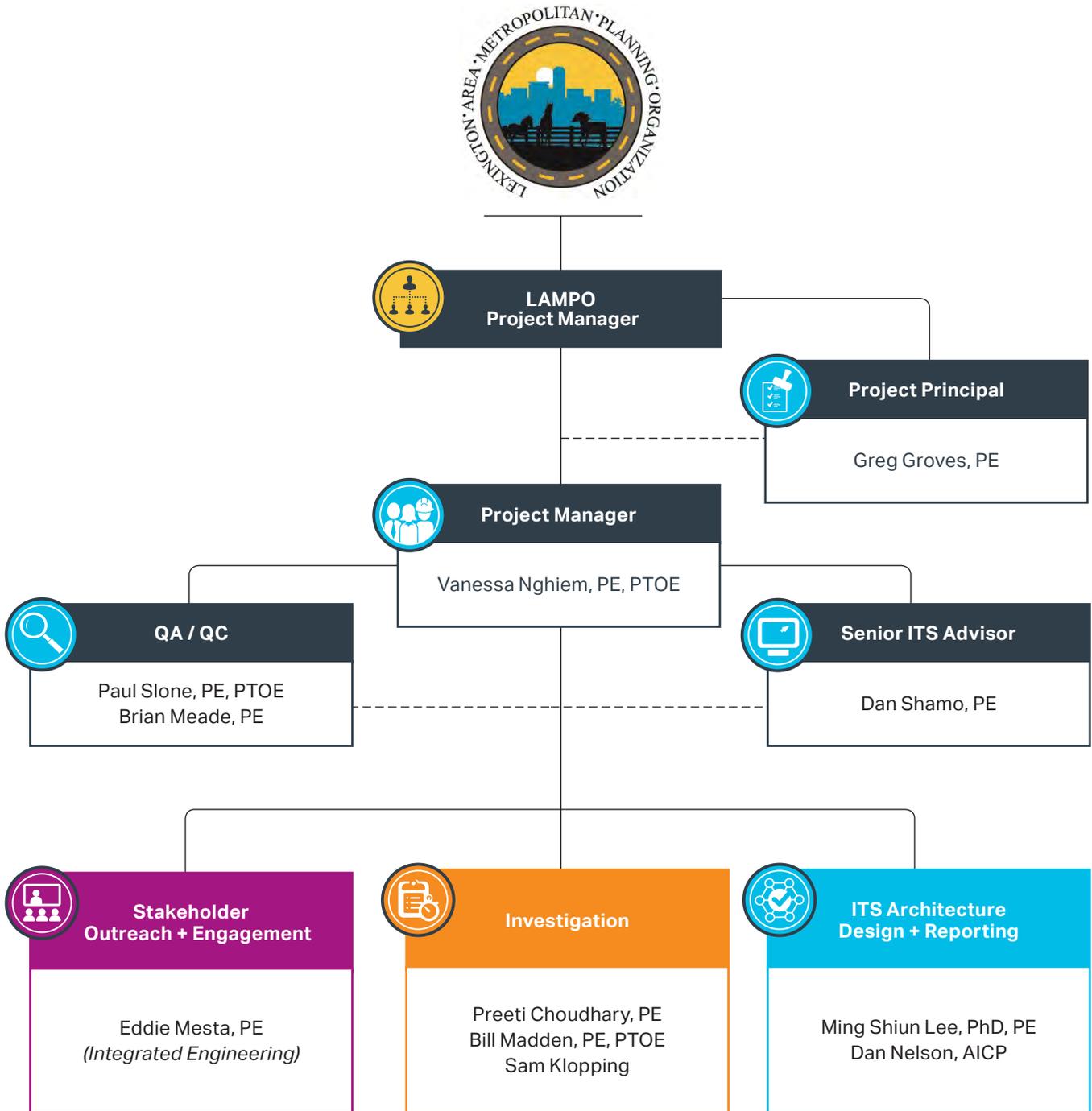


IE was founded by Harsha Wijesiri in August of 2006. They are an emerging professional civil engineering, landscape architecture, and surveying company with experience in diverse disciplines. Having worked on various public works projects IE has successfully completed numerous municipal projects in the region. They have worked with governmental agencies in various cities across Kentucky. Some of their valuable clients include the Kentucky Transportation Cabinet, Lexington-Fayette Urban County Government, the Northern Kentucky Sanitation District 1, City of Richmond, and the City of Frankfort. The staff has earned a reputation for completing projects in a responsive manner while meeting and exceeding the client's needs and expectations. This is accomplished by providing functional, economically feasible, and aesthetically pleasing designs in a timely manner.

STAKEHOLDER OUTREACH + ENGAGEMENT—Eddie Mesta, PE

Eddie Mesta, PE will be providing assistance with the public involvement component of this project. As Vice President of Integrated Engineering, he has gained a significant amount of utility coordination and community involvement experience over the last 20 years in working with public infrastructure projects.

Project Team Organizational Chart



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Vanessa Nghiem, PE, PTOE, IMSA Field Tech II Project Manager

Years Experience
15

Education
BS Civil Engineering, University of Kentucky

Certification/Training
PE KY 26090

Professional Traffic Operations Engineer, ITE
IMSA Signal Technician, Level II

Vanessa is a Project Manager with expertise in the fields of Signal Design, Signal System Timing, Traffic Control and Intersection Design. She has over 15 years of experience with consulting firms and is located in the AECOM Cincinnati, OH office. Vanessa has experience in signal design, system timing, traffic studies, lighting, traffic control, signing, plan preparation, maintenance of traffic plans, quantity calculations, and construction cost estimates.

Relevant Experience

Lexington ITS Architecture Update, LFUCG Lexington, KY, Project Manager. Project manager for the previous ITS Architecture revision for the LFUCG performed in 2014-2015. AECOM updated the regional ITS architecture for the Lexington Area MPO that covers Fayette and Jessamine Counties, Kentucky; coordinated and facilitated stakeholder involvement in identifying regional needs and plans for future ITS deployment; and developed an ITS implementation plan that identified ITS project implementation sequences and strategies.

District 7 Traffic Engineering Services, Kentucky Transportation Cabinet (2007-present), Project Manager. Providing staff augmentation to KYTC's District 7 Office (Lexington Area). Contractual duties include performing signal warrant studies, speed studies, performing signal installation inspections, managing 15 closed loop signal systems. In the first year of the contract, AECOM (as URS) evaluated over 100 intersections. After subsequent contract renewals, traffic signal warrant studies, left turn evaluations, and a sign inventory that includes 65 miles of roadway have been performed. The services also include and access management study on US 27 in Nicholasville, signal system retiming in Georgetown near the Toyota plant and continued intersection evaluations for left turn phases and signal warrants.

Statewide Traffic Engineering Services, KYTC

(2007-present), Project Manager. Project Manager providing a broad range of traffic engineering services under this statewide contract. Services include annual review and management of assigned coordinated traffic signal systems, collecting travel time data, speed studies, performing capacity analysis and developing traffic simulation models. AECOM implements and evaluates new timing plans entered into the controllers by qualified AECOM staff. This contract was renewed in 2009, 2011, 2013, 2015 and 2017.

ODOT Statewide Signal Timing, Project Manager.

Vanessa currently serves as the Project Manager for this task order type contract to perform signal system retiming on corridors throughout the State of Ohio. The corridors include small systems adjacent to freeway interchanges, major retail areas, and large systems traversing multiple municipalities.

Statewide Electrical Engineering Design Services,

KYTC (2018-present), Project Manager. AECOM was awarded this contract as prime in 2018; previously, we provided traffic signal design and highway lighting design as a subconsultant under this statewide contract. In addition to typical highway lighting, new designs for navigation lighting systems on several bridges were provided. Also, as part of HSIP funded work, AECOM provided new signal designs in 7 districts across the state to increase visibility, accessibility and safety at each intersection.

Downtown Area Traffic Signal Retiming, Lexington-Fayette Urban County Government (LFUCG), Lexington, KY (2006-2007), Project Engineer.

Responsible for developing the simulation used to improve system performance. The signal system includes 89 intersections in downtown Lexington, Kentucky. The project included an analysis of the existing system, development of improvements and implementation of the new timing.

ARRA Traffic Signal Retiming – Louisville Metro

Government (2010-2012), Project Engineer. Project Engineer for developing new traffic signal timing plans on three major arterial routes in Louisville. The study area includes Dixie Highway (US 31W), Bardstown Road (US 31E) and Fern Valley Road (KY 1737) totaling 67 intersections.



Paul Slone, PE, PTOE

Senior Traffic Engineer, QA/QC

Years Experience
27

Education
BS/Civil Engineering/ University of Kentucky, 1992

Certification/Training
PE KY 19880
PTOE

Affiliations
Georgia Section ITE
Southern District ITE
ITE
ITS Georgia

Paul Slone is a subject matter expert in on-street operations including the analysis, optimization, and programming of traffic signals. His background with multiple public agencies gives him a unique perspective of the issues faced at the state and local levels. Paul is based in Atlanta.

Relevant Experience

Lexington ITS Architecture Update, LFUCG Lexington, KY, Project Manager. Project manager during the first months of the previous ITS Architecture revision for the LFUCG performed in 2014-2015. AECOM updated the regional ITS architecture for the Lexington Area MPO that covers Fayette and Jessamine Counties, Kentucky; coordinated and facilitated stakeholder involvement in identifying regional needs and plans for future ITS deployment; and developed an ITS implementation plan that identified ITS project implementation sequences and strategies.

GA 400, Atlanta, GA, Georgia Department of Transportation, ITS Design Lead. ITS Design Lead for AECOM serving as General Engineering Consultant to GDOT on this Major Mobility Investment Project (MMIP). The MMIP, managed by the Georgia Department of Transportation, includes 11 major projects on the Georgia Interstate system: three interchange projects, four Express Lanes projects, three Interstate widening projects and one commercial vehicle lanes project. AECOM is currently performing the preliminary design of 16 miles of GA 400 beginning at the North Springs Rail station and proceeding north. Estimated at \$1.8B, the project will deliver a highly instrumented roadway facility with, electronic tolling of managed lanes, automated incident detection, incident management, ramp meters, and bus rapid transit in addition to traditional ITS applications.

Hamburg Corridor Traffic Signal Retiming, LFUCG, Lexington, KY, Senior Technical Advisor. Senior technical advisor responsible for guiding timing pattern development, quality control, implementation and adjusting eight (8) timing plans for the Hamburg area. The project considered the unique traffic characteristics of weekend traffic to improve

performance at 23 intersections on Winchester Road, Sir Barton Way, and Man o' War Boulevard. Project leveraged remote access to the MaxView central server platform to program signal databases, traffic responsive operation, and intersection monitoring capabilities. Before and after studies were performed using Inrix.

Signal Retiming, Various Routes, LFUCG, Lexington, KY, Project Manager. Project manager for this traffic operations project involving 35 intersections on four of Lexington's major arterial routes. A minimum of 12 unique coordinated timing plans were developed for weekdays and weekends. The timing plans were based on over 800 hours of traffic data collected for the project. Paul was responsible for working in the Lexington Traffic Management Center to program and download signal timing to local controllers (utilizing Centracs) as well as provide field support to adjust the timing. Final project results indicated a benefit-cost ratio on each route ranging from 35:1 to 69:1 when considering fuel and delay (time) savings for motorists.

District 7 Traffic Engineering Services, KYTC, Program Manager (2005-2015). Program manager for task-order contract for the Kentucky Transportation Cabinet District 7 office (Lexington area). Primary work activity was to assist the district staff with intersection warrant studies and operational issues. This contract has been utilized for access management projects, sign inventory, and assisting with the day-to-day operation and management of the district's 277 traffic signals and 15 closed-loop systems that are outside of Fayette County (Lexington maintains all state traffic signals in the county).

Louisville Traffic Signal Retiming, Louisville Metro Government, Louisville, KY, Project Manager. Responsible for developing new traffic signal timing plans on five major arterial routes and the central business district. The study area covers a geographically diverse set of corridors that included 120 intersections, with the number of timing plans ranging from four to nine per corridor. This project had an extensive data collection effort (over 1,000 hours of traffic data collected), development of new signal timing, signal programming, and field implementation.



Ming Shiun Lee, PhD, PE

Senior Traffic Engineer

Years Experience

23

Education

PhD, Transportation,
Washington University in St
Louis, 1998

MS, Transportation,
Washington University in St
Louis, 1992

MS, Accounting, Washington
University in St Louis, 1996

BS, Civil Engineering, National
Cheng Kung University, 1987

Certification/Training
PE MN 43396

Ming is primarily involved with engineering projects in the Intelligent Transportation Systems (ITS) and Traffic Engineering areas. He has over 23 years of experience in the areas of program management, ITS research, planning, design and implementation, ITS architecture, systems engineering, advanced transportation systems management (ATMS), transportation management centers (TMCs), active traffic and demand management (ATDM), managed lanes, transportation management centers (TMCs), integrated corridor management (ICM), connected and automated vehicles, system operations and evaluation, traffic modeling and simulation, and signal design and analysis.

Relevant Experience

Lexington Area ITS Architecture, 2014-2015, Architecture Development Lead. Updated the regional ITS architecture for the Lexington Area MPO that covers Fayette and Jessamine Counties, Kentucky. Coordinated and facilitated stakeholder involvement in identifying regional needs and plans for future ITS deployment. Developed an ITS implementation plan that identified ITS project implementation sequences and strategies.

DriveOhio Connected/Automated Vehicle Systems Engineering, 2018-Present, Architecture Development Lead. Support Ohio DOT and DriveOhio with systems engineering analysis to establish a statewide framework to guide current and future CAV strategies, testing and deployments in Ohio. Perform extensive stakeholder engagement and education; develop a statewide CAV architecture, concept of operations and requirements; prepare a program plan to serve as a roadmap for statewide deployments of CAV projects. Provide architecture training to Ohio DOT and MPO staff for incorporating CAV into statewide and regional ITS architectures.

Northeast Ohio Area Coordinating Agency

(NOACA) Regional ITS Architecture Comprehensive Update, 2018-Present, Project Manager.

Perform a comprehensive update to the regional ITS architecture and develop an ITS strategic plan for the 5-county area in the northeast Ohio (Cleveland Metropolitan Area). Perform stakeholder outreach and coordination. Apply the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) Version 8.1 to incorporate connected/automated vehicle applications, smart city technologies, and other emerging technologies to the regional ITS architecture and strategic plan.

Ohio-Kentucky-Indiana (OKI) Regional Council of Governments Regional ITS Architecture Update, 2016, Task Lead.

Led the update effort for the regional ITS architecture. Performed stakeholder surveys; updated, developed and prioritized projects for future deployment.

Minnesota Statewide ITS Architecture Update,

2017-2019, Project Manager. Updated the Minnesota ITS Architecture using the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) Version 8.2. Refined Minnesota ITS Development Objectives and performance measures to monitor the status and measure the effectiveness of ITS deployment in Minnesota. Developed an ITS Implementation Plan to guide future ITS investments in Minnesota.

Ohio Statewide ITS Architecture, 2015-2016, Task Manager.

Led the development of the statewide ITS architecture for the state of Ohio. Reviewed and consolidated seven MPO regional ITS architectures in Ohio and incorporated other urban and rural areas into the Statewide ITS architecture. Developed and prioritized projects for future deployment. Developed an architecture maintenance and use plan to guide the use of the architecture for project planning and design and for ongoing architecture maintenance and updates.

Flint Hills Regional ITS Architecture, 2014-2015, Project Manager.

Developed the first regional ITS architecture for the Flint Hills MPO planning area that covers a three-county area. Facilitated stakeholder workshops to identify gaps and opportunities, future projects to promote ITS deployment, expansion and integration. Produced a user-friendly report, a detailed architecture report, an architecture website, and a maintenance plan to guide future ITS investment in the region.



Dan Nelson, AICP

ITS Planner (ITS Architecture and Systems)

Years Experience
12

Education
MA, Urban and Regional Planning, University of Iowa, 2006

BA, Economics and American Studies, St. Olaf College, 2004

Affiliations
ITS Minnesota, Past President

Certification/Training
AICP #024115

Dan is an ITS planner in the Minneapolis office. He has worked with multiple public sector agencies on the application of all steps of the systems engineering process to multiple ITS projects for state departments of transportation and multiple public transportation agencies.

Relevant Experience

Lexington Area ITS Architecture, 2014-2015, ITS Planner. Assisted with updates to the regional ITS architecture for the Lexington Area MPO that covers Fayette and Jessamine Counties, Kentucky. Coordinated and facilitated stakeholder involvement in identifying regional needs and plans for future ITS deployment. Developed an ITS implementation plan that identified ITS project implementation sequences and strategies.

Ohio-Kentucky-Indiana (OKI) MPO, OKI Regional ITS Architecture Update, Cincinnati, OH (ITS Architecture Lead), 2016. Dan updated the Regional ITS Architecture previously developed for the Ohio-Kentucky-Indiana (OKI) MPO region that reflects the existing and planned ITS technologies in that region surrounding Cincinnati, OH. Dan reviewed the existing Turbo ITS Architecture database developed by and updated it for OKI and updated the ITS inventory, service packages, and interconnections between all regional ITS elements. Using the Turbo database, Dan developed a new project website for the OKI region and also updated the Final Report, which included a plan to maintain the OKI Regional ITS Architecture that details the roles and responsibilities of agency stakeholders in maintaining, updating, and using the architecture.

Illinois Department of Transportation (IDOT), Illinois Statewide ITS Architecture and Strategic Plan Update, 2016 to present. Dan is currently updating the Illinois Statewide ITS Strategic Plan previously developed in 2006 for the Illinois DOT to reflect the existing and planned ITS projects throughout the state. Dan developed surveys to gather information on ITS projects, and also facilitated discussions at stakeholder workshops across all nine IDOT Districts with multiple public-sector agencies on existing and planned ITS projects, which included an IDOT District 1 workshop held at CMAP offices in September 2018. Dan will be updating the ITS Strategic Plan in 2019 with inputs

gathered from all IDOT District workshops and will be coordinating with IDOT ITS Office staff on updates to the plan.

Northeast Ohio Area Coordinating Agency (NOACA) MPO, NOACA Regional ITS Architecture Update, Cleveland, OH, (ITS Architecture Lead), 2018 to present. Dan is currently updating the Regional ITS Architecture previously developed for the Northeast Ohio Area Coordinating Agency (NOACA) MPO region that reflects the existing and planned ITS technologies in the 5-county region surrounding Cleveland, OH. Dan developed surveys to gather information on regional ITS elements and facilitated discussions at stakeholder workshops with multiple public-sector agencies on the existing and planned regional ITS elements. With the recently released RAD-IT software, Dan is updating the previous Turbo database to account for updates to the ITS projects, inventory, stakeholders, service packages, and interconnections between agencies in the region. Dan also developed a project website to receive public feedback on the ITS Architecture and maintain records of all project meetings and deliverables.

Minnesota Department of Transportation, Minnesota Statewide ITS Architecture Updates, Minneapolis, MN 2009 / 2014 / 2018. Dan has assisted MnDOT in updating its Statewide ITS Architecture on three separate occasions in 2009, 2014, and in 2018. Dan is currently supporting MnDOT with a transition of their ITS Architecture from Turbo to the recently updated RAD-IT software. In 2018, Dan participated in multiple stakeholder workshops to gather information on existing and planned ITS elements throughout the state. In 2014, Dan developed a series of objectives and performance measures that conform to the FHWA-recommended S.M.A.R.T. (Specific, Measurable, Agreed, Realistic, and Time-bound) characteristics. Dan has also developed an ITS Architecture Maintenance Plan to guide MnDOT as new ITS projects are proposed.

Minnesota Department of Transportation (MnDOT), Minnesota Strategic ITS Development Plan, June 2014 to August 2015. Dan assisted MnDOT in developing a Strategic ITS Development Plan that provides recommendations on ITS strategies and countermeasures that can help achieve MnDOT's ITS Development Objectives. Dan gathered research on existing ITS studies, reports, and performance measures, and ultimately recommended a number of ITS Development Objectives to be further analyzed.



Preeti Choudhary, PE

Senior ITS Engineer

Years Experience

10

Education

MS, Transportation Planning & Engineering, NYU Tandon School of Engineering, 2011

BS, Civil Engineering, NYU Tandon School of Engineering, 2011

Certification/Training

PE, NY

Affiliations

Women's Transportation Seminar (WTS)

Institute of Transportation Engineers (ITE)

ITS America

Preeti is a Senior ITS Manager located in Columbus, OH. Preeti has diverse experience on ITS, transit, and traffic planning and engineering projects. She has worked with small and large transportation agencies across the country to plan for, deploy and promote innovative mobility options, with active involvement in all project stages, from planning and concept development through testing and deployment. Preeti's past projects include systems engineering analyses, strategic planning studies, and technology deployment support.

Relevant Experience

Ohio Statewide Framework for Connected Vehicle/Automated Vehicle (AV/CV) Deployments, DriveOhio, Ohio (Deputy Project Manager). Currently serves as Deputy Project Manager for the development of a framework to guide current and future connected and autonomous vehicle strategies, testing and deployment across the State of Ohio. The framework includes a project architecture that integrates into ODOT's existing Statewide ITS Architecture; a Concept of Operations that describes the target CV/AV environment and operation; System Requirements that define functionality for CV/AV applications and the support environment; Construction Drawings for various components of CV/AV infrastructure; and, Verification Plans to validate each application. Agencies and planning organizations around the state will use the tools provided in this framework as a resource for planning and deploying interoperable CV/AV projects across urban, suburban, and rural communities.

Whatcom Transportation Authority (WTA) ITS Consultant, WTA, Bellingham, WA (Deputy Project Manager).* Served as Deputy Project Manager in support of WTA's ITS program, under which several new ITS systems, including Fixed Route CAD/AVL, Fixed Route Predictive Arrival, and Traffic Signal Priority (TSP) Automation were deployed. These solutions integrated with WTA's existing ITS environment, which includes systems such as mini-

bus CAD/AVL, vehicle data networks, and Trapeze suite. Additionally, provided strategic consulting for the execution of WTA's five-year ITS plan.

Stark Area Regional Transportation Authority (SARTA) Fare Collection System Replacement, SARTA, Canton, OH.* Led the development of system specifications for SARTA's fare collection system replacement project. Worked with SARTA to support vendor selection and implementation.

King County Metro Strategic Technology Roadmap for Transit, Seattle, WA.* Worked Metro's Strategic Technology Roadmap for Transit to address how technology will be used in the future to support transit service delivery. Provided recommendations for improving Metro's technology solution analysis and prioritization process.

Greater Dayton Regional Transit Authority (GDRTA) Mobility-as-a-Service (MaaS) Concept Development, GDRTA, Dayton, OH.* Worked to research and develop the technical and operational concepts for GDRTA's MaaS platform for the Greater Dayton region, with a focus on determining details of an integrated payments system for riders. Worked with GDRTA to determine effective procurement and implementation strategies for the new MaaS system.

Clark County Public Transportation (C-TRAN), Technology Consultant Services, Vancouver, WA.* Supported a multiple-task order contract with C-TRAN to assist design and implementation of various technology, network, and infrastructure improvements. Tasks included implementation of a new bus surveillance system, farebox replacement, CAD/AVL system enhancement, and a radio system upgrade.

Spokane Transit Authority (STA) High Performance Transit Network Design and Service Communication Standards, STA, Spokane, WA.* Worked on the development of a comprehensive facilities design manual that provides guidance for implementing High Performance Transit (HPT) facilities and features to a high standard of quality, functionality, safety, comfort, and maintainability. The manual will serve as a resource for communicating HPT standards to a variety of internal and external stakeholders.

* Experience while employed with other firms/agencies



Dan Shamo, PE

Senior ITS Advisor

Years Experience 48	Certification/ Training PE IN PE MI	Affiliations Institute of Transportation Engineers
Education BS, Civil Engineering, Purdue University, 1971		

Dan has an extensive background in transportation engineering and project management. His areas of expertise include Intelligent Transportation Systems (ITS) and Traffic Operations. His experience includes establishing the current Intelligent Transportation System (ITS) initiatives for the Indiana Department of Transportation, Traffic Operations, Virtual Weigh Stations and ITS Planning.

Relevant Experience

Lexington Area ITS Architecture, 2014-2015, Project Advisor. Actively engaged in the development of the recent ITS Architecture initiative in Lexington, KY.

Illinois Statewide ITS Architecture, Project Advisor. Provided extensive support for Architecture information gathering sessions across the state of Illinois during the initial ITS Architecture development process.

Gary-Chicago-Milwaukee (GCM) Corridor ITS Architecture, Project Advisor. As Executive Director of GCM, provided support to several member agencies as they pursued their ITS Architectures. This included training and planning level support initiatives.

TRIMARC Coordination, Greater Louisville Area, Kentucky Agency Representative. Dan represented the State of Indiana during the development of the TRIMARC program in the greater Louisville area. Although the State of Kentucky contracted the design, construction and operation of the system which spans both states, INDOT participated by providing 25% of the funding during the first ten years of TRIMARC operation. Dan played a major role establishing this partnership during the planning, design, construction and operation of the system.

Illinois Department of Transportation, Statewide ITS Strategic Plan and ITS Architecture Technical Support, Statewide Locations, Illinois, ITS Engineer. Development of a statewide strategic plan to deploy and integrate ITS technologies in Illinois to improve traffic system performance and operations. The plan outlined the high priority transportation needs in the state and recommended how to deploy projects to address these needs in a manner that best uses available resources.



Greg Groves, PE

Project Principal

Years Experience 30	Affiliations Transportation Advisory Board, Greater Louisville Inc. Board of Directors, American Society of Highway Engineers (ASHE) Board of Directors,	American Public Works Association (APWA) KYTC Advanced Leadership Academy (ALA) Mentor Member Highway Subcommittee, ACEC-KY
Education BS, Civil Engineering, University of Kentucky		
Certification / Training PE, KY, 18066		

Greg was a career employee with the Kentucky Transportation Cabinet (KYTC) serving predominantly in the project development area during his tenure. Greg serves as the Director of Transportation and Office Manager for the Louisville office. He is responsible for the operation of a 60+ person office that includes several engineering and environmental disciplines serving both public and private clients. Greg is heavily involved in several professional organizations including American Society of Highway Engineers, American Public Works Association, Kentucky Society of Professional Engineers, and Kentuckians for Better Transportation.

Relevant Experience

Town Branch Commons Project, LFUCG, Lexington, KY, Program Manager. AECOM is providing program management and general engineering services for the project, which includes a 2.5 mile multi-modal path and park system that will wind through downtown Lexington, following the path of historic Town Branch Creek.

District 7 Traffic Engineering Services, (2007-present), KYTC, Project Principal. This project involves a staff augmentation contract for KYTC's District 7 Office. Studies include traffic signal requests, speed studies and other traffic engineering studies, supervision of the district electrical contractor, and assisting with the day-to-day operation and management of the district's 277 traffic signals and 15 closed loop systems that are outside of Fayette County.

Statewide Traffic Engineering Services, (2007-present), KYTC, Project Principal. Responsible for providing a broad range of traffic engineering services under this statewide contract. Services include annual review and management of assigned coordinated traffic signal systems, collecting travel time data, speed studies, performing capacity analysis and developing traffic simulation models.



Brian Meade, PE
Senior Engineer, QA/QC

<p>Areas of Expertise Project Management Traffic Operations Agency Coordination</p> <p>Years Experience 30</p> <p>Education BS Civil</p>	<p>Engineering, University of Kentucky</p> <p>Certification/ Training PE KY 18079</p> <p>Affiliations Transportation Advisory Board, Greater Louisville</p>	<p>Inc. (GLI) American Society of Highway Engineers (ASHE) American Public Works Association (APWA)</p>
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Brian was a career employee with the Kentucky Transportation Cabinet before joining AECOM in Louisville. While with KYTC, Brian served as the Branch Manager for Traffic Operations, and as the Branch Manager for Project Development. His experience in transportation ranges from rural to urban. Brian’s KYTC experience has allowed him to work closely with multiple public agencies and to engage with elected officials, personnel from other agencies, and the public.

Relevant Experience

Lexington Town Branch Commons Program Management Services, Lexington, KY, Project Manager. Brian is the Project Manager for the Town Branch Commons project in Lexington, KY. AECOM is providing program management and general engineering services for the project which runs through the heart of downtown Lexington. The project calls for a 2.5 mile multi-modal path and park system that will wind through downtown Lexington, following the path of historic Town Branch Creek.

KYTC Statewide LPA General Services, Project Manager. Design and engineering services at the direction of KYTC and other Local Public Agencies, including roadway design, sidewalk design, transit enhancements, streetscape design, structural design, surveying, site design services, construction document prep/engineering, planning services, geotechnical design, traffic engineering, environmental services, and permitting.

KYTC Traffic and Permits Branch, I-71 Widening Project (Phase I Design), Jefferson County, KY.* This project included and analysis of I-71 for the purpose of making it a six lane section. Brian represented the cabinet on matters of traffic Operations, Signing and Markings and geometric layout. Several alternates for the addition of the sixth lane were considered including adding the lane to the inside (median and to the outside (shoulder. Also included to this analysis were consideration for BRT (Bus Rapid Transit Lanes) and Carpool Lanes. This Phase I analysis led to projects at the interchanges of I-71/ Zorn Avenue, I-71/I-264 and at I-71/I-265.



William F. Madden, PE, PTOE
Senior Traffic Engineer

<p>Years Experience 34</p> <p>Education BS, Civil Engineering, University of Kentucky</p>	<p>Certification/ Training KY PE 15943 OH PE 72934 Professional Traffic Operations Engineer (PTOE)</p>
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Bill is a project engineer with AECOM (formerly URS) after 23 years with Kentucky Transportation Cabinet (KYTC). He is experienced in several areas of traffic engineering. Bill is located in the AECOM Cincinnati office.

Relevant Experience

District Seven Traffic Engineering Services Contract, KYTC (2007-Present), Project Engineer. Responsible for performing operational reviews of traffic signal installation and modification requests, safety studies, and signing inventories. To date, over 225 intersections and 16 signal systems have been reviewed. This is a multi-year contract that was renewed in 2009, 2011, 2013, 2015, 2017 and 2019. Special studies such as access improvement projects and Traffic Impact Studies have also been issued under this contract.

Man O’ War Small Area Study, Lexington KY, Project Engineer. AECOM was tasked by the KYTC District 7 staff and Lexington Fayette Urban County Government (LFUCG) to develop short-term and long-term improvement projects for the Man O’ War Small Area in the vicinity of I-75 on the east side of Lexington, KY. This study involved large amounts of data collection to define the existing situation and evaluate which areas suffered the most severe traffic congestion. Alternatives range from short term, relatively low cost “quick fix” types to long term, and more costly options.

Statewide Traffic Engineering Services Contract, KYTC (2007-Present), Project Engineer. Responsible for providing a broad range of traffic engineering services under this statewide contract. Services include annual review and management of assigned coordinated traffic signal systems,collecting travel time data, speed studies, performing capacity analysis and developing traffic simulation models. To date, AECOM has worked on 11 signal systems: US 60 in Paducah, (26 intersections), Various Routes in Covington (38 intersections), Multiple Routes in Northern KY (16 intersections), US 431 in Owensboro (19 intersections), and smaller systems in West Liberty, Maysville, Irvine, Florence, Ludlow, Covington and Radcliffe.



Eddie Mesta, PE | Integrated Engineering Stakeholder Outreach + Engagement

Years Experience 23
University of Kentucky

Certification / Training
PE, KY, 22048
PE, IN, 10200289
PE, TN,

Education
BS, Civil Engineering,

Eddie provides a wide array of experience for both public and private sector clients. He is responsible for design involving transportation, wastewater collection, storm water drainage, site development, and water supply for private and public entities. Experience includes public involvement and stakeholder coordination, bidding, construction administration, easement acquisition, and presentations.

Relevant Experience

Tates Creek Road Sidewalk Project, LFUCG, Fayette County, KY. Project Manager currently coordinating the planning, civil engineering, surveying and streetscape layout for the design of over 16,000 linear feet sidewalks for both sides of Tates Creek Road from inside of Alumni Drive outbound to the Lansdowne Shoppes area. Five existing signalized and twelve existing non-signalized intersections will be modified to accommodate pedestrian access. Significant public involvement has taken place on this project with area residents, business owners, and churches. The final design follows current state and federal Local Public Agency (LPA) guidelines. Significant coordination has been made with utility companies to determine any potential construction comments. Coordination with LEXTRAN has also been made to determine optimal bus shelter locations.

New Circle Road NE Scoping Study, Fayette County, KY. Involved in the scoping study for the 6-mile signalized portion of the New Circle Road N.E. corridor for the Kentucky Transportation Cabinet. Experience included helping facilitate numerous focus group and public meetings throughout the duration of the project. The results of the study produced various design alternatives with preliminary construction cost estimates. The Lexington Area MPO also participated in this study. Involvement also included participating in presentations to the Lexington - Fayette Urban County Council.

LFUCG Redistricting Committee, Fayette County, KY. Volunteered as one of twelve district representatives for LFUCG's Redistricting Committee. Responsibilities included attending bi-weekly meetings throughout the four-month process to redistrict the twelve (12) council districts in accordance with the rules and provisions established in with LFUCG and KRS ordinances. 2010 census data and future planning and growth projections were the primary sources of data for the determination of the council districts that were established for the next 10 years.



Sam Klopping Graduate Traffic Engineer

Years Experience <1

Education
BS, Civil Engineering,
University of Cincinnati

Sam is a graduate traffic engineer who recently joined the AECOM team in Cincinnati. Sam gained valuable experience as a co-op for both the Ohio Department of Transportation as well as with an engineering firm. He is skilled in Microstation, GEOPAK, AutoCAD, Synchro, VISSIM, SignCAD, Excel, Access, Estimator, Bluebeam, VectorWorks, and MATLAB.

Relevant Experience

District 7 Traffic Engineering Services, KYTC, Graduate Engineer. This project involves a staff augmentation contract for KYTC's District 7 Office. Studies include traffic signal requests, speed studies and other traffic engineering studies, supervision of the district electrical contractor, and assisting with the day-to-day operation and management of the district's 277 traffic signals and 15 closed loop systems that are outside of Fayette County.

KY 17 Improvements, KYTC D6, Subconsultant to EA Partners, Graduate Engineer. Aided in the traffic forecast calculations and Synchro model development of alternatives in order to compare various impacts of each alternative.

Engineering firm, Ohio, Civil Engineering Co-op*. Helped analyze and redesign intersection at I-74 and Dry Fork Road using HCS and Microstation. Organized an Origin-Destination study in Hamilton by setting up Bluetooth scanners and sorting the data in Microsoft Access. Retimed signals at multiple intersections through Synchro. Gathered field data and helped develop a database for multiple County Asset Management projects.

Ohio Department of Transportation, Civil Engineering Co-op*. Assisted the department in signal and sign design, as well as mapping detours. Used SignCAD and Synchro, and signal cabinets. Focused on water management and drainage design. Used Microstation and GEOPAK to design culverts and other drainage systems in both 2D and some 3D. Helped design and draft roadway plans, estimated costs of projects, and went on field visits. Effectively used Microstation, GEOPAK, and Estimator.

Capacity



Current Workload and Projected Project Commitments

AECOM and its partners have the resources and capacity to integrate this program into our current workloads. We recognize the importance of this project and the critical timeframes of the funding. Our firms have evaluated their current project workloads and estimated the availability of their key personnel for this specific assignment. All have excess capacity and availability to complete the work.

AECOM currently has several projects winding down and several other projects advancing to construction this calendar year. Based on our current and forecasted workload of our branch and our regional staff, we will have the available capacity to complete the tasks assigned under this contract in an expeditious manner.

Currently our project engineers and key staff have between 40-70% projected availability. Availability for our team's key staff is presented in the table at right.

Team Member	% Available
Greg Groves, PE	55%
Vanessa Nghiem, PE, PTOE	60%
Paul Slone, PE, PTOE	55%
Brian Meade, PE	55%
Ming Shiun Lee, PhD, PE	60%
Dan Nelson, AICP	60%
Dan Shamo, PE	40%
Preeti Choudhary, PE	65%
Bill Madden, PE, PTOE	50%
Eddie Mesta, PE (Integrated Engineering)	70%
Sam Klopping	70%

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02

Project Understanding & Approach



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Project Understanding & Approach



Project Understanding

AECOM understands that LAMPO needs to update its 2015 Regional ITS Architecture Study for the region in order to keep pace with rapid changes in ITS technology developments. To update the Regional ITS Architecture, transportation stakeholders in the region will need an understanding of the regional and statewide framework to determine appropriate goals for ITS deployments and the ITS objectives the LAMPO region must meet in the future.

Our team is strongly positioned to work with LAMPO on this project given AECOM's previous experience with completing the 2015 Lexington Area ITS Architecture Study. This past experience along with our recent and current work in the region gives us a thorough understanding of the ITS elements in the LAMPO region.

AECOM has current project experience with utilizing the Architecture Reference for Coordinated and Intelligent Transportation (ARC-IT) in updating Regional ITS Architectures for other MPOs and state agencies. ARC-IT serves as a national reference for building and updating regional and statewide ITS architectures, and was released by the U.S. Department of Transportation (USDOT) as version 8.0 in June 2017 to include Connected and Automated Vehicles, and their related ITS infrastructure, given the rapid pace of change and progress being made within this industry. Additional updates to ARC-IT were made by the USDOT, and the latest version (Version 8.3) was released in June 2019.

ARC-IT provides a unifying framework that covers these and other ITS technologies in a comprehensive manner, which will help LAMPO to effectively 1) meet needs that are expressed by transportation stakeholders in the region, 2) ensure regulatory compliance with federal regulations governing the use and update of regional ITS architectures, and 3) facilitate efficient, secure, and interoperable ITS deployments in the LAMPO region over the coming years.

AECOM uses a proven approach to developing and updating regional and statewide ITS Architectures while minimizing stakeholder effort as much as possible. We will develop draft system information flows using material already collected through the 2015 ITS Architecture Study, and also utilize our in-depth knowledge of current and planned projects in the region. We will provide diagrams for stakeholders to comment on and respond to, as opposed to having stakeholders provide the information from scratch. We will provide the information to stakeholders electronically and follow up with phone calls when needed to educate stakeholders about project material, or to ask questions. We will immediately begin the project by working on the draft framework for the updated ITS Architecture and present it during our initial stakeholder engagement meeting. This will consolidate one round of meetings by combining the project introduction / kickoff and the initial draft presentation into one meeting with the stakeholders. A key component of this initial stakeholder meeting will be educating the regional stakeholders on ITS and emerging technologies.

This initial draft of the Regional ITS Architecture update will be based upon our in-depth knowledge of the existing ITS technologies in the region that AECOM documented through the 2015 Lexington Area ITS Architecture Study, as well as our knowledge with ITS deployments of the Kentucky Transportation Cabinet (KYTC) and the LFUCG, and other key stakeholders in the region, such as Lextran, Jessamine County, and state-level agencies such as the Kentucky State Police.

Through stakeholder outreach that AECOM performed during the 2015 Lexington Area ITS Architecture Study, we understand the ITS elements that have been deployed in

the region, and the ITS Projects that were planned for in the short term, medium term and long term timeframes through the ITS Architecture. AECOM will refer to these ITS projects during stakeholder outreach efforts to determine which projects have begun to be implemented and what other ITS projects could be added to the Architecture to account for new ITS technologies, such as smart city technologies and connected and automated vehicles. For example, while the 2015 Lexington Area ITS Architecture includes “Vehicle-to-Infrastructure (V2I) Applications” as a planned project, AECOM can add other projects to more specifically identify how connected vehicle applications, such as Curve Speed Warning or Queue Warning, can be reflected within new ITS projects if desired by the region.

AECOM has an excellent working relationship with many of the stakeholders through other ITS projects in the area, such as the US 27 Access Management Study performed for the KYTC District 7 office. Our local team of engineers brought various groups together including the KYTC, LFUCG, LAMPO, Bluegrass ADD, City of Nicholasville, Jessamine County and other local citizen based transportation groups to gain consensus for that project. A key challenge during the 2015 Lexington Area ITS Architecture Study was engaging stakeholder agencies in Jessamine County. AECOM will work with the LAMPO to identify key contacts in Jessamine County, proactively reach out to them at the onset of the project, provide project background information and expected benefits, and encourage them to participate in various stages of the project. AECOM will use the same approach with the above enhancements to bring together these and other LAMPO regional stakeholders in updating the 2015 Lexington Area ITS Architecture for this project



Stakeholder outreach is critical for ITS Architecture updates



Installing ITS sign equipment to provide updates to drivers

Project Approach

The AECOM Team’s approach to ITS deployment planning and architecture updates emphasizes the important role of stakeholder involvement, agency coordination, cooperation and consensus building. This key emphasis on outreach, communication and coalition building is the cornerstone in AECOM’s proven success in developing ITS strategic deployment plans and architectures. The figure shown below illustrates this process.

Our team is very familiar with the ITS architecture development and update process from our involvement with a variety of ITS architecture projects across the United States. We will build upon our ITS architecture experience and local working knowledge to assist the LAMPO and stakeholders in efficiently updating the Lexington Area ITS Architecture.

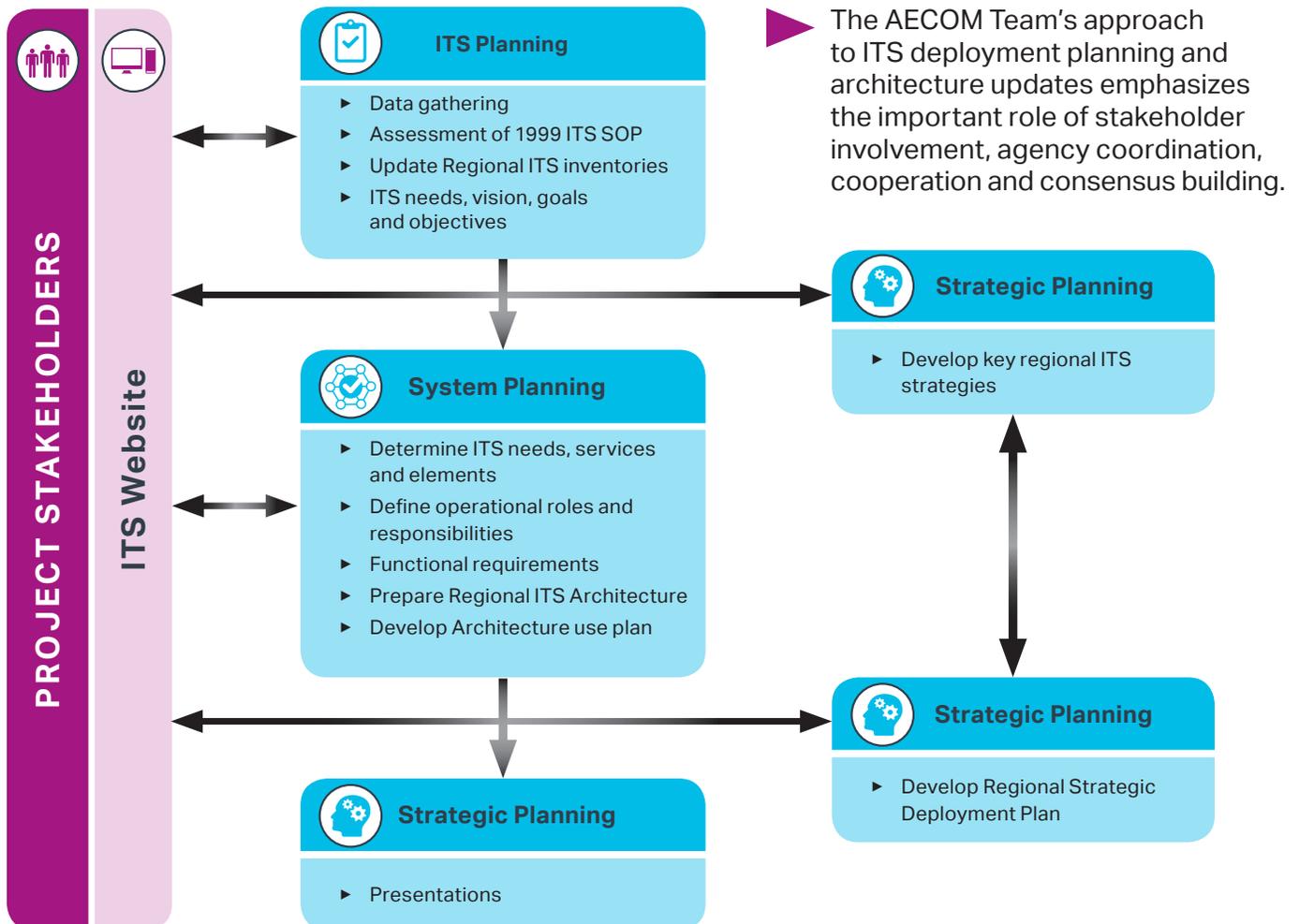
The AECOM Team will collect significant input from various stakeholders in Fayette and Jessamine Counties. The identification of appropriate stakeholders and transportation partners and the ability to engage them in open dialog to create consensus about the benefits of an

ITS Architecture is required. This Regional ITS Architecture Update will include stakeholder workshops to accomplish stakeholder engagement, to identify transportation needs in the region, and to ensure the updated ITS Architecture remains in compliance with the FHWA Final Rule and FTA Final Policy.

The project approach steps listed below and requested by LAMPO within the Scope of Work are also listed within the FHWA Chapter 23 Code of Federal Regulations (CFR) 940 as it pertains to updates of regional ITS architectures. AECOM will follow these steps as described below in completing the project:

Identification of any changes of Federal Requirements

AECOM is very familiar with federal requirements specifically, the FHWA 23 CFR 940 and Federal Transit Administration (FTA) Policy on ITS Architecture and Standards. These requirements pertain to the need for an ITS architecture in order to use federal funding for ITS



projects, as well as the steps to follow in developing regional ITS architectures.

We are also familiar with the requirements of additional regulations noted by LAMPO, namely the Title VI of the Civil Rights Act of 1964, the Americans with Disabilities Act of 1990 (ADA), and, the Disadvantaged Business Enterprise (DBE) program, described in 49 CFR 26. These requirements also pertain to the usage of DBE firms in the performance of the update to the Regional ITS Architecture.

Identification of existing ITS infrastructure

The AECOM team’s previous experience with updating the 2015 Regional ITS Architecture demonstrates our knowledge of the existing ITS elements and planned ITS projects within the LAMPO area. The AECOM Team will work with the LAMPO and regional stakeholders to: 1) review the existing ITS elements and projects, and 2) identify new technologies and systems that have been deployed or planned since the 2015 ITS Architecture update.

This task will include the creation of a GIS map showing the location of existing and planned ITS projects in the region. This information can be integrated into a GIS database, such as the KYTC’s Highway Information System (HIS) and LFUCG GIS systems. Our team partner Integrated Engineering will provide the GIS Services.

Changes in regional needs since the last Architecture Update performed in 2015

In order to continually optimize the transportation network in the region, the AECOM Team will identify and update the growing local ITS needs. Some examples of the needs are:

- Connected and automated vehicles are beginning to be deployed cooperatively by public agencies and private sector partners;
- The fiber optic communications backbone continues to expand;

- Surveillance cameras are now digital and have high resolution images;
- Adaptive signal systems change according to day to day fluctuations in traffic compared to rigid time of day scheduling of timing plans;
- Automated traffic signal performance measures (ATSPMs) can help optimize traffic signal timing and improve the overall safety, mobility and efficiency of signalized intersections for all system users; and
- The need for route reliability and measuring their performance

New stakeholders

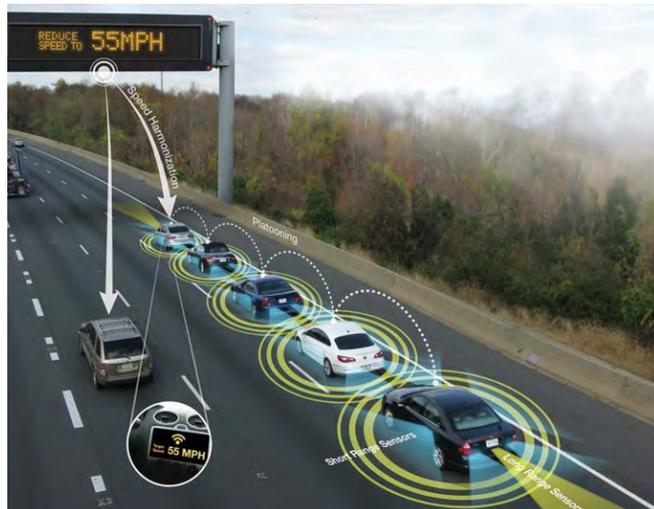
At the project kickoff meeting with the LAMPO, the project team will review the stakeholders that were documented in the 2015 Regional ITS Architecture and discuss the inclusion of other transportation related groups, agencies, and individuals in the development of an updated Architecture.

Changes in the range and scope of ITS services considered

Some of the current ITS services include the use of the LFUCG surveillance cameras in the dissemination of traffic reports to the media through the Traffic Information Network. The LFUCG Division of Traffic Engineering has made live traffic data such as streaming camera views available via the internet since the 2015 ITS Architecture Update. Our team will explore such recent changes as well as future deployment options with the KYTC and LFUCG to review if any changes and updates have been made to ITS services in the region.

Changes in stakeholder and ITS element names

At the onset of the project, we will coordinate with the LAMPO to review the list of stakeholders that were contacted and documented within the 2015 Regional



Vehicles are now more connected than ever before (US DOT)



Technology advances continuously along with the need for ITS Architecture updates



Our project manager, Vanessa Nghiem, at a project site



ITS alerts motorists of traffic conditions to keep us all safe

ITS Architecture. We will also update and add new ITS elements/technologies that have evolved or been deployed since 2015. Some of these elements include the updated Centracas signal system, and TransPhat, which is the KYTC traffic signal management software.

Changes in relevant ITS architectures (e.g., Kentucky Statewide)

The update to the 2015 Lexington Area ITS Architecture will be based upon the most recent version (version 8.3) of ARC-IT as a national reference architecture, as well as any updates that have been made to the Kentucky Statewide ITS Architecture. AECOM has used ARC-IT to develop and update ITS architectures for many MPOs and state agencies, and has an in-depth understanding on how emerging technologies such as connected and automated vehicles are integrated.

Description of the region

Fayette and Jessamine Counties are geographically and demographically very diverse. From horse farms to agriculture, from dense urban centers to small urban areas and rural back roads to major urban arterials, the dual county area is very diverse on many fronts. AECOM will use this understanding in stakeholder outreach efforts at the beginning of the project.

Identification of the participating agencies and stakeholders

The current list of stakeholders within the 2015 Regional ITS Architecture will be updated. At the project kickoff, we will coordinate with the LAMPO staff to update the listing of contact information that AECOM obtained from the previous 2015 project, as well as explore opportunities for new stakeholders to be added for stakeholder outreach.

An operational concept that identifies roles and responsibilities of stakeholders

Based on information gathered from stakeholders, the AECOM Team will define and document stakeholders' roles and responsibilities in planning, design, implementation, management, operations, and maintenance of ITS elements and systems in the region. The Operational Roles and Responsibilities will identify the operational roles and responsibilities of each project stakeholder in the region. This identification of operational roles and responsibilities is especially important where ITS crosses institutional and jurisdictional boundaries. The operational roles and responsibilities will generally be bullet point lists, kept at a relatively high level that will identify "who does what" with regard to operation of ITS. The roles and responsibilities may include, but not be limited to the following subject areas:

- Procurement of the System(s)
- Design and Implementation of the System(s)
- Day-to-Day Operation of the System(s)
- Day-to-Day Maintenance of the System(s)
- Long-Term Maintenance of the System(s)
- Funding Strategies for the System(s)
- Periodic Upgrades to the System(s)
- Replacement and Disposal of the System(s)

These operational roles and responsibilities will be reviewed with the regional stakeholders for accuracy and "buy-in." Operational roles and responsibilities will not be identified and assigned to any particular regional stakeholder without their understanding and consent

Any agreements required for operations

AECOM is familiar with an on-going maintenance agreement between LFUCG and KYTC for the operation and maintenance of state-owned traffic signals within Fayette County. There is no such agreement in Jessamine County and none is expected in the near future. Through AECOM's previous work completed in 2015, it was learned that the LFUCG Division of Traffic Engineering has explored

the possibility of operating some signals in northern Jessamine County on US 27 and those located within the Brannon Crossing development. However, it was ruled by the LFUCG's Division of Law that LFUCG employees cannot perform such duties outside of Fayette County. With this ITS Architecture update project, AECOM will continue to investigate potential avenues for collaborative agreements between the various stakeholder agencies in the development of the plan.

System functional requirements (high level)

Functional requirements are a key piece of the systems engineering process and are essential for developing systems and subsystems. Functional requirements explain what a system is supposed to do, but not how it is done. The AECOM Team will develop high-level functional requirements for the ITS components and systems in the Regional ITS Architecture. These functional requirements are a tool for developing more specific requirements for projects. The project sponsors can choose to use these requirements to advance regional goals or to supplement project-level requirements. The high-level functional requirements will be grouped into major categories consistent with the Kentucky Statewide Architecture and ARC-IT national reference architecture. The functional requirements will be consistent with those in ARC-IT:

Interface requirements and information exchanges with planned and existing systems and subsystems

The AECOM Team will prepare the Regional ITS Architecture consistent with Version 8.3 of ARC-IT, FHWA Rule 940.9, and Part V of the FTA National ITS Architecture Policy for Transit Projects. AECOM will convert the Turbo Architecture database of the 2015 ITS Architecture to the format that is consistent with the latest ARC-IT framework. AECOM will use the most recent ITS architecture development software known as Regional Architecture Development for Intelligent Transportation (RAD-IT) to perform the conversion and to update the Architecture. This updated RAD-IT database will provide a structure to show service packages, user services, and data connections between systems and subsystems.

Identifications of ITS standards supporting regional and national interoperability

It is FHWA policy that ITS Architectures be developed to guide the development of ITS projects and programs and be consistent with ITS strategies and projects contained in applicable transportation plans. It is required that ARC-IT as a national reference ITS architecture be used as a resource in the development and update of the LAMPO Regional ITS Architecture. AECOM will use the latest ARC-IT and RAD-IT

to identify applicable ITS standards to support integration and interoperability

Sequence of projects required for implementation

In gathering stakeholder input on the status of ITS projects identified in the 2015 Lexington Area ITS Architecture as well as projects that are on the horizon, we will update the prioritized listing of ITS projects that have been noted as Short Term (0-3 Years), Medium Term (4-6 Years), and Long Term (7 Years and Beyond). The update of this prioritized listing of projects will also be consistent with the current goals and objectives of the 2045 Metropolitan Transportation Plan and Transportation Improvement Plan, and see how the projects fit within the projected funding for such projects.

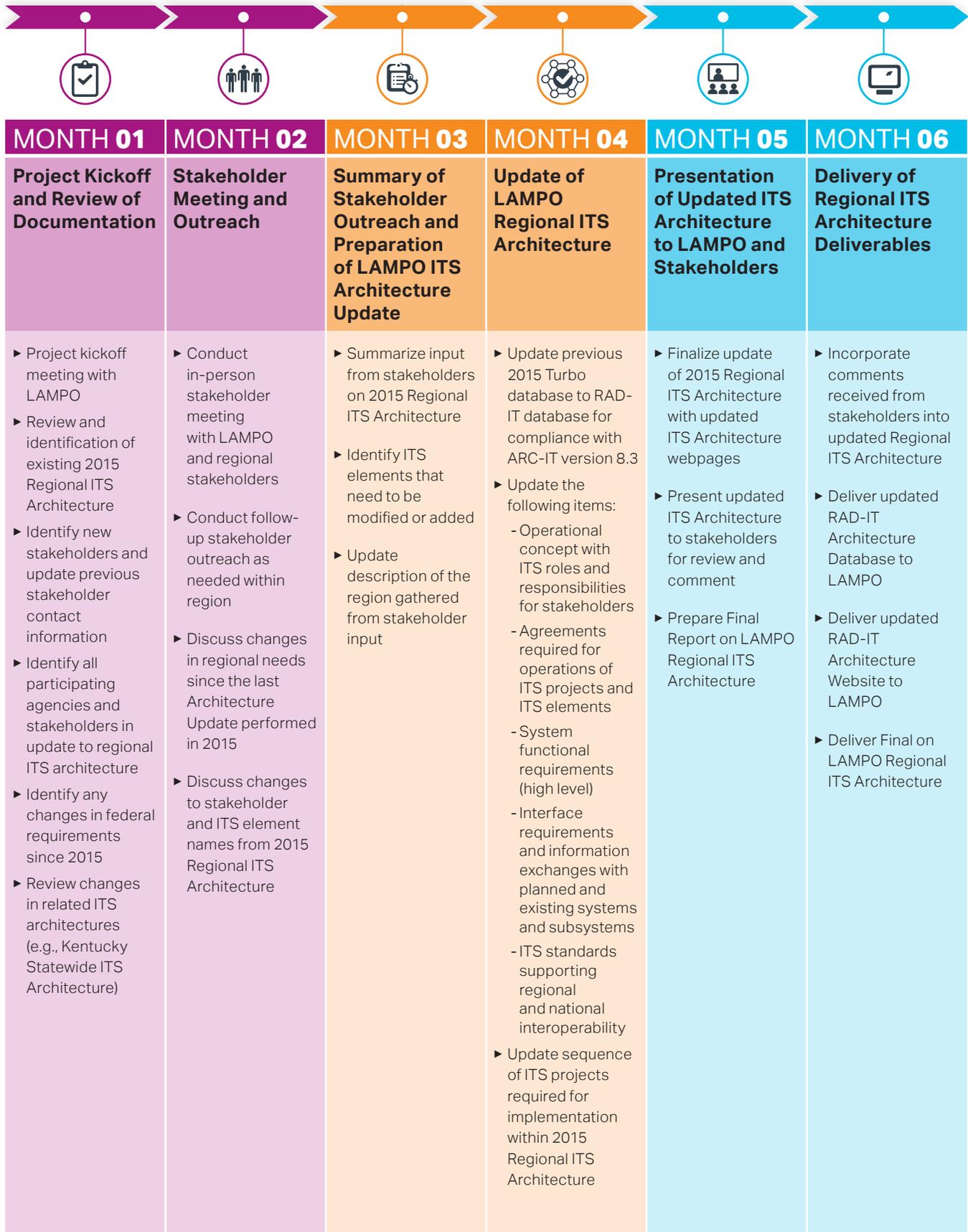
AECOM Proposed Project Schedule

The AECOM team is fully capable of completing this project within a 6-month period from the issuance of a formal Notice-to-Proceed from LAMPO. We have outlined a project timeline on the following page that covers the primary project activities to be completed by the AECOM team for LAMPO.

Why Select AECOM?

-  **AECOM technical leaders are committed to the success of this project.** AECOM has the local experience with the LFUCG, KYTC, and other stakeholders. We've brought our Midwest expert on ITS Architecture, Dr. Ming-Shiun Lee, to the project, receiving the commitment that this project will be as successful as his other Midwestern ITS projects.
-  **AECOM can educate and build consensus with the Stakeholders.** Through our familiarity and previous local experience, our engineers and our subconsultant will work to deliver technical information in a relaxed, comprehensible format, allowing stakeholders the knowledge base to understand the technologies, deployments and benefits of ITS.
-  **Schedule.** Our familiarity with the current ITS elements and local operations will jump start this project, making a five to six month schedule feasible.
-  **Quality.** We promote a performance standard based on high quality professional services, where costs and scope are continuously managed.

Proposed Project Schedule



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03

Appendices



Aerial view of Lexington, KY

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AFFIDAVIT

Comes the Affiant, Gregory T. Groves, and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is Gregory T. Groves and he/she is the individual submitting the proposal or is the authorized representative of AECOM Technical Services, Inc. (AECOM), the entity submitting the proposal (hereinafter referred to as "Proposer").

2. Proposer will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.

3. Proposer will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.

4. Proposer has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.

5. Proposer has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Proposer will not violate any provision of the campaign finance laws of the Commonwealth.

6. Proposer has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as "Ethics Act."

Continued on next page

7. Proposer acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Further, Affiant sayeth naught.

Gregory T. Groves

STATE OF Kentucky

COUNTY OF Jefferson

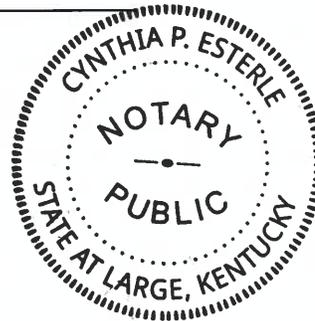
The foregoing instrument was subscribed, sworn to and acknowledged before me

by Gregory T. Groves on this the 30th day

of August , 20 19 .

My Commission expires: November 22, 2019

NOTARY PUBLIC, STATE AT LARGE



EQUAL OPPORTUNITY AGREEMENT

Standard Title VI Assurance

The Lexington Fayette-Urban County Government, (hereinafter referred to as the "Recipient") hereby agrees that as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation, it will comply with Title VI of the Civil Rights Act of 1964, 78Stat.252, 42 U.S.C. 2000d-4 (hereinafter referred to as the "Act"), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, (49 CFR, Part 21) Nondiscrimination in Federally Assisted Program of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the "Regulations") and other pertinent directives, no person in the United States shall, on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Recipient receives Federal financial assistance from the U.S. Department of Transportation, including the Federal Highway Administration, and hereby gives assurance that will promptly take any necessary measures to effectuate this agreement. This assurance is required by subsection 21.7(a) (1) of the Regulations.

The Law

- Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and sub-contractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- Section 503 of the Rehabilitation Act of 1973 states:

The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.

- Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal contracts.
- Section 206(A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:

The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractors may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped and aged persons.



Signature

AECOM Technical Services, Inc. (AECOM)

Name of Business

WORKFORCE ANALYSIS FORM

Name of Organization: AECOM Technical Services, Inc. - Louisville Office

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African-American (Not Hispanic or Latino)		Native Hawaiian and Other Pacific Islander (Not Hispanic or Latino)		Asian (Not Hispanic or Latino)		American Indian or Alaskan Native (not Hispanic or Latino)		Two or more races (Not Hispanic or Latino)		Total	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators		5	3													5	3
Professionals		38	13			2	1			1	2					41	16
Superintendents																	
Supervisors																	
Foremen																	
Technicians		4														4	
Protective																	
Para-																	
Office/Clerical		1	1													1	1
Skilled Craft																	
Service/Maintena																	
Total:		48	17			2	1			1	2					51	20

Prepared by: Madvi Pitani (Employee Relations & Compliance Specialist) Date: 08 / 27 / 2019

(Name and Title)

Revised 2015-Dec-15

CO= N132756
 U= N132756

**EQUAL EMPLOYMENT OPPORTUNITY
 2018 EMPLOYER INFORMATION REPORT
 CONSOLIDATED REPORT - TYPE 2**

SECTION B - COMPANY IDENTIFICATION

1. AECOM TECHNOLOGY CORPORATION
 1999 AVENUE OF THE STARS

LOS ANGELES, CA 90067

2.a. AECOM TECHNOLOGY CORPORATION
 1999 AVENUE OF THE STARS

LOS ANGELES, CA 90067
 LOS ANGELES COUNTY

c. Y

SECTION C - TEST FOR FILING REQUIREMENT

1-Y 2-N 3-Y DUNS NO.:611088522 EIN :611088522

SECTION E - ESTABLISHMENT INFORMATION

NAICS: 541330 Engineering Services

SECTION D - EMPLOYMENT DATA

JOB CATEGORIES	HISPANIC OR LATINO		NOT-HISPANIC OR LATINO										OVERALL TOTALS		
	MALE	FEMALE	WHITE	BLACK OR AFRICAN AMERICAN	NATIVE HAWAIIAN OR PACIFIC ISLANDER	ASIAN	AMERICAN INDIAN OR ALASKAN NATIVE	TWO OR MORE RACES	WHITE	BLACK OR AFRICAN AMERICAN	NATIVE HAWAIIAN OR PACIFIC ISLANDER	ASIAN		AMERICAN INDIAN OR ALASKAN NATIVE	TWO OR MORE RACES
EXECUTIVE/SR OFFICIALS & MGRS	3	1	86	2	0	6	1	1	36	2	0	2	0	1	141
FIRST/MID OFFICIALS & MGRS	119	51	1987	60	2	172	2	17	530	50	4	65	0	7	3066
PROFESSIONALS	446	284	5510	260	12	856	24	74	2556	206	10	490	16	62	10806
TECHNICIANS	127	33	1007	106	7	86	8	17	194	18	0	37	2	3	1645
SALES WORKERS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADMINISTRATIVE SUPPORT	45	119	232	76	3	31	0	1	467	148	6	60	2	14	1204
CRAFT WORKERS	2	0	20	1	0	0	0	0	0	0	0	0	0	0	23
OPERATIVES	1	0	11	1	0	0	0	0	0	1	0	0	0	0	14
LABORERS & HELPERS	91	6	220	99	2	1	2	1	2	9	0	0	0	0	433
SERVICE WORKERS	5	1	83	37	1	0	0	0	2	1	0	0	0	0	130
TOTAL	839	495	9156	642	27	1152	37	111	3787	435	20	654	20	87	17462
PREVIOUS REPORT TOTAL	882	542	10323	598	36	1220	34	117	4381	431	19	669	22	112	19386

SECTION F - REMARKS

DATES OF PAYROLL PERIOD: 12/16/2018 THRU 12/29/2018

SECTION G - CERTIFICATION

CERTIFYING OFFICIAL: LISA O. BOECKER
 EEO-1 REPORT CONTACT PERSON: LISA O. BOECKER
 EMAIL: LISA.BOECKER@AECOM.COM

TITLE: SR. DIR EMP RELATIONS COMPLIANCE
 TITLE: SR. DIR EMP RELATIONS COMPLIANCE
 TELEPHONE NO: 7175033162

CERTIFIED DATE[EST]: 05/13/2019 10:20 AM

**DIRECTOR, DIVISION OF CENTRAL PURCHASING
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
200 EAST MAIN STREET
LEXINGTON, KENTUCKY 40507**

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITIES AND DBE CONTRACT PARTICIPATION

Notice of requirement for Affirmative Action to ensure Equal Employment Opportunities and Disadvantaged Business Enterprises (DBE) Contract participation. Disadvantaged Business Enterprises (DBE) consists of Minority-Owned Business Enterprises (MBE) and Woman-Owned Business Enterprises (WBE).

The Lexington-Fayette Urban County Government has set a goal that not less than ten percent (10%) of the total value of this Contract be subcontracted to Disadvantaged Business Enterprises, which is made up of MBEs and WBEs. The Lexington Fayette Urban County Government also has set a goal that not less than three percent (3%) of the total value of this Contract be subcontracted to Veteran-owned Small Businesses. The goal for the utilization of Disadvantaged Business Enterprises as well Veteran –owned Small Businesses as subcontractors is a recommended goal. Contractor(s) who fail to meet such goal will be expected to provide written explanations to the Director of the Division of Purchasing of efforts they have made to accomplish the recommended goal, and the extent to which they are successful in accomplishing the recommended goal will be a consideration in the procurement process. Depending on the funding source, other DBE goals may apply.

For assistance in locating Disadvantaged Business Enterprises Subcontractors contact:

Sherita Miller, MPA, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, 3rd Floor, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

Lexington-Fayette Urban County Government
MWDBE PARTICIPATION GOALS

A. GENERAL

- 1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE), Disadvantaged (DBE) Business Enterprises and Veteran-Owned Small Businesses (VOSB) as subcontractors or suppliers in their bids.
- 2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Minority-Owned, Woman-Owned and Disadvantaged Businesses on this contract.
- 3) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) for MWDBE participation and other requirements as outlined in this section.**
- 4) The LFUCG has also established a 3% of total procurement costs as a Goal for participation for of Veteran-Owned Businesses.
- 5) **It is therefore a request of each Bidder to include in its bid, the same goal (3%) for Veteran-Owned participation and other requirements as outlined in this section.**

B. PROCEDURES

- 1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all payments submitted to Minority-Owned, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
- 2) Replacement of a Minority-Owned, Woman-Owned or Veteran-Owned subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE Substitution Form)
- 3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:
 - a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)
- 4) The LFUCG will make every effort to notify interested MWDBE and Veteran-Owned subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

C. DEFINITIONS

- 1) A Minority-Owned Business Enterprise (MBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by persons of African American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage.
- 2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by one or more women.

- 3) A Disadvantaged Business (DBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by a person(s) that are economically and socially disadvantaged.
- 4) A Veteran-Owned Small Business (VOSB) is defined as a business which is certified as being at least 51% owned, managed and controlled by a veteran and/or a service disabled veteran.
- 5) Good Faith Efforts are efforts that, given all relevant circumstances, a bidder or proposer actively and aggressively seeking to meet the goals, can reasonably be expected to make. In evaluating good faith efforts made toward achieving the goals, whether the bidder or proposer has performed the efforts outlined in the Obligations of Bidder for Good Faith Efforts outlined in this document will be considered, along with any other relevant factors.

D. OBLIGATION OF BIDDER FOR GOOD FAITH EFFORTS

- 1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for MWDBE and Veteran-Owned subcontractors/suppliers. The failure to meet the goal shall not necessarily be cause for disqualification of the bidder; however, bidders not meeting the goal are required to furnish with their bids written documentation of their Good Faith Efforts to do so.**
- 2) Award of Contract shall be conditioned upon satisfaction of the requirements set forth herein.
- 3) The Form of Proposal includes a section entitled “MWDBE Participation Form”. The applicable information must be completed and submitted as outlined below.
- 4) **Failure to submit this information as requested may be cause for rejection of bid or delay in contract award.**

E. DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS

- 1) Bidders reaching the Goal are required to submit only the MWDBE Participation Form.” The form must be fully completed including names and telephone number of participating MWDBE firm(s); type of work to be performed; estimated value of the contract and value expressed as a percentage of the total Lump Sum Bid Price. The form must be signed and dated, and is to be submitted with the bid.
- 2) Bidders not reaching the Goal must submit the “MWDBE Participation Form”, the “Quote Summary Form” and a written statement documenting their Good Faith Effort to do so. If bid includes no MWDBE and/or Veteran participation, bidder shall enter “None” on the subcontractor / supplier form). In addition, the bidder must submit written proof of their Good Faith Efforts to meet the Participation Goal:
 - a. Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.
 - b. Included documentation of advertising in the above publications with the bidders good faith efforts package

- c. Attended LFUCG Central Purchasing Economic Inclusion Outreach event
- d. Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned businesses of subcontracting opportunities
- e. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses.
- f. Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).
- g. Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.
- d. Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs and/or Veteran-Owned businesses soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.
- e. Followed up initial solicitations by contacting MWDBEs and Veteran-Owned Businesses to determine their level of interest.
- j. Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.
- k. Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce
- l. Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.
- m. Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.
- n. Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

o. Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

p. Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

q. Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

Note: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to review by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.



MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA
Minority Business Enterprise Liaison
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507
smiller@lexingtonky.gov
859-258-3323

OUR MISSION: The mission of the Minority Business Enterprise Program is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long term economic viability of Lexington-Fayette Urban County Government.

To that end the city council adopted and implemented Resolution 484-2017 – A Certified Minority, Women and Disadvantaged Business Enterprise ten percent (10%) minimum goal and a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and Certified Service Disabled Veteran – Owned Businesses for government contracts.

The resolution states the following definitions shall be used for the purposes of reaching these goals (a full copy is available in Central Purchasing):

Certified Disadvantaged Business Enterprise (DBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a person(s) who is socially and economically disadvantaged as define by 49 CFR subpart 26.

Certified Minority Business Enterprise (MBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by an ethnic minority (i.e. African American, Asian American/Pacific Islander, Hispanic Islander, Native American/Native Alaskan Indian) as defined in federal law or regulation as it may be amended from time-to-time.

Certified Women Business Enterprise (WBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a woman.

Certified Veteran-Owned Small Business (VOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

Certified Service Disabled Veteran Owned Small Business (SDVOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a disabled veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

The term “Certified” shall mean the business is appropriately certified, licensed, verified, or validated by an organization or entity recognized by the Division of Purchasing as having the appropriate credentials to make a determination as to the status of the business.

We have compiled the list below to help you locate certified MBE, WBE and DBE certified businesses. Below is a listing of contacts for LFUCG Certified MWDBEs and Veteran-Owned Small Businesses in (<https://lexingtonky.ionwave.net>)

Business	Contact	Email Address	Phone
LFUCG	Sherita Miller	smiller@lexingtonky.gov	859-258-3323
Commerce Lexington – Minority Business Development	Tyrone Tyra	ttyra@commercelexington.com	859-226-1625
Tri-State Minority Supplier Diversity Council	Susan Marston	smarston@tsmsdc.com	502-365-9762
Small Business Development Council	Shawn Rogers UK SBDC	shawn.rogers@uky.edu	859-257-7666
Community Ventures Corporation	Phyllis Alcorn	palcorn@cvky.org	859-231-0054
KY Transportation Cabinet (KYTC)	Melvin Bynes	Melvin.bynes2@ky.gov	502-564-3601
KYTC Pre-Qualification	Shella Eagle	Shella.Eagle@ky.gov	502-782-4815
Ohio River Valley Women’s Business Council (WBENC)	Sheila Mixon	smixon@orvwbc.org	513-487-6537
Kentucky MWBE Certification Program	Yvette Smith, Kentucky Finance Cabinet	Yvette.Smith@ky.gov	502-564-8099
National Women Business Owner’s Council (NWBOC)	Janet Harris-Lange	janet@nwbo.org	800-675-5066
Small Business Administration	Robert Coffey	robertcoffey@sba.gov	502-582-5971
LaVoz de Kentucky	Andres Cruz	lavozydeky@yahoo.com	859-621-2106
The Key News Journal	Patrice Muhammad	production@keynewsjournal.com	859-685-8488



LFUCG MWDBE PARTICIPATION FORM
 Bid/RFP/Quote Reference # RFP # 36-2019

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1. Integrated Engineering, PLLC 166 Prosperous Place, Suite 220 Lexington KY 40509 Phone: 859-368-0145 Fax: 859-904-1538 arlens@int-engineering.com	DBE	Public Engagement + Stakeholder Outreach	TBD	10%
2.				
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

AECOM Technical Services, Inc. (AECOM)
Company
August 30, 2019
Date


Company Representative Gregory T. Groves
Vice President
Title



MWDBE QUOTE SUMMARY FORM
 Bid/RFP/Quote Reference # RFP # 36-2019

The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project. Failure to submit this form may cause rejection of the bid.

Company Name AECOM Technical Services, Inc.	Contact Person Gregory T. Groves
Address/Phone/Email 500 West Jefferson Street, Suite 1600 Louisville, KY 40202 502.569.2301	Bid Package / Bid Date RFP # 36-2019 / September 3, 2019

MWDBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc)	Total dollars \$\$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female	Veteran

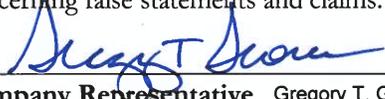
(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

AECOM Technical Services, Inc.

Company
 August 30, 2019

Date



Company Representative Gregory T. Groves
 Vice President

Title



LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. The LFUCG also has a 3% goal plan adopted by cited council to increase the participation of veteran owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDBE and Veteran contractors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

Bid/RFP/Quote # RFP # 36-2019

Total Contract Amount Awarded to Prime Contractor for this Project _____

Project Name/ Contract # RFP #36-2019 Engineering Services for the Lexington Area Metropolitan Planning Organization (LAMPO)	Work Period/ From: _____ To: _____
Company Name: AECOM Technical Services, Inc.	Address: 500 West Jefferson St., Ste.1600 Louisville KY 40207
Federal Tax ID: 95-2661922	Contact Person: Gregory T. Groves

Subcontractor Vendor ID (name, address, phone, email)	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

AECOM Technical Services, Inc.

Company

August 30, 2019

Date

Company Representative

Vice President

Title

LFUCG STATEMENT OF GOOD FAITH EFFORTS

Bid/RFP/Quote # RFP # 36-2019

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE and Veteran-Owned business enterprises on the project and can supply the appropriate documentation.

 Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.

 Included documentation of advertising in the above publications with the bidders good faith efforts package

 Attended LFUCG Central Purchasing Economic Inclusion Outreach event

 Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned Businesses of subcontracting opportunities

 Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses

 Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).

 Contacted organizations that work with MWDBE companies for assistance in finding certified MWBDE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

 X Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

 X Followed up initial solicitations by contacting MWDBEs and Veteran-Owned businesses to determine their level of interest.

 X Provided the interested MWBDE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

 X Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items

into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce

X Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

_____ Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

_____ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

_____ Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

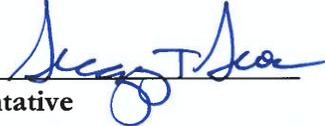
_____ Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

_____ Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE **and Veteran participation.**

NOTE: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to approval by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

AECOM Technical Services, Inc.
Company
August 30, 2019
Date

Gregory T. Groves 
Company Representative
Vice President
Title

GENERAL PROVISIONS

1. Each Respondent shall comply with all Federal, State & Local regulations concerning this type of service or good.

The Respondent agrees to comply with all statutes, rules, and regulations governing safe and healthful working conditions, including the Occupational Health and Safety Act of 1970, *29 U.S.C. 650 et. seq.*, as amended, and KRS Chapter 338. The Respondent also agrees to notify the LFUCG in writing immediately upon detection of any unsafe and/or unhealthful working conditions at the job site. The Respondent agrees to indemnify, defend and hold the LFUCG harmless from all penalties, fines or other expenses arising out of the alleged violation of said laws.

2. Failure to submit ALL forms and information required in this RFP may be grounds for disqualification.
3. Addenda: All addenda and IonWave Q&A, if any, shall be considered in making the proposal, and such addenda shall be made a part of this RFP. Before submitting a proposal, it is incumbent upon each proposer to be informed as to whether any addenda have been issued, and the failure to cover in the bid any such addenda may result in disqualification of that proposal.
4. Proposal Reservations: LFUCG reserves the right to reject any or all proposals, to award in whole or part, and to waive minor immaterial defects in proposals. LFUCG may consider any alternative proposal that meets its basic needs.
5. Liability: LFUCG is not responsible for any cost incurred by a Respondent in the preparation of proposals.
6. Changes/Alterations: Respondent may change or withdraw a proposal at any time prior to the opening; however, no oral modifications will be allowed. Only letters, or other formal written requests for modifications or corrections of a previously submitted proposal which is addressed in the same manner as the proposal, and received by LFUCG prior to the scheduled closing time for receipt of proposals, will be accepted. The proposal, when opened, will then be corrected in accordance with such written request(s), provided that the written request is contained in a sealed envelope which is plainly marked "modifications of proposal".
7. Clarification of Submittal: LFUCG reserves the right to obtain clarification of any point in a bid or to obtain additional information from a Respondent.
8. Bribery Clause: By his/her signature on the bid, Respondent certifies that no employee of his/hers, any affiliate or Subcontractor, has bribed or attempted to bribe an officer or employee of the LFUCG.

9. Additional Information: While not necessary, the Respondent may include any product brochures, software documentation, sample reports, or other documentation that may assist LFUCG in better understanding and evaluating the Respondent's response. Additional documentation shall not serve as a substitute for other documentation which is required by this RFP to be submitted with the proposal,
10. Ambiguity, Conflict or other Errors in RFP: If a Respondent discovers any ambiguity, conflict, discrepancy, omission or other error in the RFP, it shall immediately notify LFUCG of such error in writing and request modification or clarification of the document if allowable by the LFUCG.
11. Agreement to Bid Terms: In submitting this proposal, the Respondent agrees that it has carefully examined the specifications and all provisions relating to the work to be done attached hereto and made part of this proposal. By acceptance of a Contract under this RFP, proposer states that it understands the meaning, intent and requirements of the RFP and agrees to the same. The successful Respondent shall warrant that it is familiar with and understands all provisions herein and shall warrant that it can comply with them. No additional compensation to Respondent shall be authorized for services or expenses reasonably covered under these provisions that the proposer omits from its Proposal.
12. Cancellation: If the services to be performed hereunder by the Respondent are not performed in an acceptable manner to the LFUCG, the LFUCG may cancel this contract for cause by providing written notice to the proposer, giving at least thirty (30) days notice of the proposed cancellation and the reasons for same. During that time period, the proposer may seek to bring the performance of services hereunder to a level that is acceptable to the LFUCG, and the LFUCG may rescind the cancellation if such action is in its best interest.

A. Termination for Cause

- (1) LFUCG may terminate a contract because of the contractor's failure to perform its contractual duties
- (2) If a contractor is determined to be in default, LFUCG shall notify the contractor of the determination in writing, and may include a specified date by which the contractor shall cure the identified deficiencies. LFUCG may proceed with termination if the contractor fails to cure the deficiencies within the specified time.
- (3) A default in performance by a contractor for which a contract may be terminated shall include, but shall not necessarily be limited to:
 - (a) Failure to perform the contract according to its terms, conditions and specifications;
 - (b) Failure to make delivery within the time specified or according

- to a delivery schedule fixed by the contract;
- (c) Late payment or nonpayment of bills for labor, materials, supplies, or equipment furnished in connection with a contract for construction services as evidenced by mechanics' liens filed pursuant to the provisions of KRS Chapter 376, or letters of indebtedness received from creditors by the purchasing agency;
 - (d) Failure to diligently advance the work under a contract for construction services;
 - (e) The filing of a bankruptcy petition by or against the contractor;
or
 - (f) Actions that endanger the health, safety or welfare of the LFUCG or its citizens.

B. At Will Termination

Notwithstanding the above provisions, the LFUCG may terminate this contract at will in accordance with the law upon providing thirty (30) days written notice of that intent, Payment for services or goods received prior to termination shall be made by the LFUCG provided these goods or services were provided in a manner acceptable to the LFUCG. Payment for those goods and services shall not be unreasonably withheld.

13. **Assignment of Contract:** The contractor shall not assign or subcontract any portion of the Contract without the express written consent of LFUCG. Any purported assignment or subcontract in violation hereof shall be void. It is expressly acknowledged that LFUCG shall never be required or obligated to consent to any request for assignment or subcontract; and further that such refusal to consent can be for any or no reason, fully within the sole discretion of LFUCG.
14. **No Waiver:** No failure or delay by LFUCG in exercising any right, remedy, power or privilege hereunder, nor any single or partial exercise thereof, nor the exercise of any other right, remedy, power or privilege shall operate as a waiver hereof or thereof. No failure or delay by LFUCG in exercising any right, remedy, power or privilege under or in respect of this Contract shall affect the rights, remedies, powers or privileges of LFUCG hereunder or shall operate as a waiver thereof.
15. **Authority to do Business:** The Respondent must be a duly organized and authorized to do business under the laws of Kentucky. Respondent must be in good standing and have full legal capacity to provide the services specified under this Contract. The Respondent must have all necessary right and lawful authority to enter into this Contract for the full term hereof and that proper corporate or other action has been duly taken authorizing the Respondent to enter into this Contract. The Respondent will provide LFUCG with a copy of a corporate resolution authorizing this action and a letter from an attorney confirming that the proposer is authorized to do business in the State of Kentucky if requested. All proposals must

be signed by a duly authorized officer, agent or employee of the Respondent.

16. **Governing Law:** This Contract shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky. In the event of any proceedings regarding this Contract, the Parties agree that the venue shall be the Fayette County Circuit Court or the U.S. District Court for the Eastern District of Kentucky, Lexington Division. All parties expressly consent to personal jurisdiction and venue in such Court for the limited and sole purpose of proceedings relating to this Contract or any rights or obligations arising thereunder. Service of process may be accomplished by following the procedures prescribed by law.
17. **Ability to Meet Obligations:** Respondent affirmatively states that there are no actions, suits or proceedings of any kind pending against Respondent or, to the knowledge of the Respondent, threatened against the Respondent before or by any court, governmental body or agency or other tribunal or authority which would, if adversely determined, have a materially adverse effect on the authority or ability of Respondent to perform its obligations under this Contract, or which question the legality, validity or enforceability hereof or thereof.
18. Contractor understands and agrees that its employees, agents, or subcontractors are not employees of LFUCG for any purpose whatsoever. Contractor is an independent contractor at all times during the performance of the services specified.
19. If any term or provision of this Contract shall be found to be illegal or unenforceable, the remainder of the contract shall remain in full force and such term or provision shall be deemed stricken.
20. Contractor [or Vendor or Vendor's Employees] will not appropriate or make use of the Lexington-Fayette Urban County Government (LFUCG) name or any of its trade or service marks or property (including but not limited to any logo or seal), in any promotion, endorsement, advertisement, testimonial or similar use without the prior written consent of the government. If such consent is granted LFUCG reserves the unilateral right, in its sole discretion, to immediately terminate and revoke such use for any reason whatsoever. Contractor agrees that it shall cease and desist from any unauthorized use immediately upon being notified by LFUCG.



Signature Gregory T. Groves

August 30, 2019

Date

AFFIRMATIVE ACTION PROGRAM FOR MINORITIES & WOMEN

AECOM Technical Services Inc.

Louisville, KY

January 1, 2019 through December 31, 2019

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Preface

AECOM Technical Services Inc. (also referred to as the Company) is fully committed to the concept and practice of equal opportunity and affirmative action.

In the preparation of this Affirmative Action Program (AAP), AECOM Technical Services Inc. has been guided by Executive Order 11246 and its implementing regulations. Nothing contained in this AAP or its supporting data should be construed as an admission by the Company, in whole or in part, that it has contravened any federal, state or local employment practice laws.

In developing and implementing the AAP, the Company has been guided by its established policy of providing equal employment opportunity. Nothing herein is intended to sanction the discriminatory treatment of any person. Indeed, all employment decisions at the Company are made based on job related criteria. Thus, this AAP has been developed in strict reliance upon the Guidelines on Affirmative Action issued by the Equal Employment Opportunity Commission ("EEOC") (29 C.F.R. Part 1608).

While AECOM Technical Services Inc. firmly believes in wide dissemination of its affirmative action policies and equal employment opportunity practices, this AAP contains certain proprietary information relating to the Company's business that must be kept confidential. The detailed information provided in good faith as a part of the AAP contains specific information that, if disseminated, could be detrimental to the competitive and business interests of AECOM Technical Services Inc..

Therefore, even though the Company is justifiably proud of its efforts described in the following pages, this AAP and its support data are to be disclosed to individuals, companies and government agencies only where such individuals or entities have a legitimate business interest or legal entitlement to the information. AECOM Technical Services Inc. specifically requests the following:

- If this AAP or any supporting data or documentation is submitted to Office of Federal Contract Compliance Programs ("OFCCP") pursuant to the Executive Order, the Rehabilitation Act, the Vietnam Era Veterans' Readjustment Assistance Act, and/or any implementing regulations (as any or all may have been or may be amended), those documents and the information they contain are to be considered confidential and not subject to disclosure without notifying AECOM Technical Services Inc. of the agency's decision to disclose and providing the Company with ample time to contest the disclosure. Advance notice of disclosure should be sent to Todd David. The Company requests this information be treated as exempt from public disclosure under the Freedom of Information Act, 5 U.S.C. §552.
- If this AAP or any supporting data or documentation is supplied by Company to another government contractor, EEOC or fair employment practices agency representatives, or any other person, it is not to be copied, reproduced, or disclosed by such persons without prior notification to AECOM Technical Services Inc..
- No information contained in the AAP or any supporting data or documentation is to be copied, removed from the premises, or released to other individuals without a prior notification to and permission from AECOM Technical Services Inc..
- Reports that require specific data, such as names of employees and salary information, are not an official part of this AAP. This information is on file at the Company as Documentation and Supporting Data for AAP Reports and is available for review only

as required by law.

This AAP does not constitute an express or implied contract between the Company and its employees, job applicants, or other persons, nor does it change in any way the basic at will employment relationship all Company employees have with the Company. Nothing in this AAP creates a private right of action on behalf of any individual group against the Company.

Introduction

Ever committed to affirmative action, AECOM Technical Services Inc. has prepared this AAP to cover employees reporting to and/or working in Louisville, KY. This plan also covers employees working in other establishments who report to managers included in this plan. In accordance with 41 C.F.R. 60-2.1, employees included in AAPs other than where they are located are listed in the annotated employee list reports. These reports identify the actual location of such employees.

As detailed in the Job Group Analysis, this AAP covers 55 employees including 6 (10.91%) minorities and 13 (23.64%) women. It is expected these employees will help us to reach mutual goals of profitability and efficiency, resulting in both business and personal growth. As described in detail in the Plan that follows, the management of AECOM Technical Services Inc. has a continuing commitment to the practice and implemented action of this AAP.



Statement of Commitment from AECOM's Chief Executive Officer

It is the policy of AECOM not to discriminate or allow the harassment of employees or applicants on the basis of sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law with regard to any employment practices, including recruitment, advertising, job application procedures, hiring, training, promotion, transfer, compensation, job assignments, benefits, and/or other terms, conditions of employment, provided the individual is qualified, with or without reasonable accommodations, to perform the essential functions of the job. This policy applies to all jobs at the Company. The Company will continue to ensure that individuals are employed, and that employees are treated during employment, without regard to their sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law in all employment practices as follows:

Employment decisions at the Company are based on legitimate job-related criteria. All personnel actions or programs that affect qualified individuals, such as employment, promotion, demotion, transfer, recruitment, advertising, termination, rate of pay or other forms of compensation, and selection for training, are made without discrimination because of any basis protected by law. Employees may choose to voluntarily disclose their sex, race, national origin, disability and protected veteran status at any time by contacting Human Resources. Such information will be maintained in a confidential manner and will not be used against an individual when making any employment decisions. Employees and applicants with disabilities and disabled veterans are encouraged to inform Human Resources if they need a reasonable accommodation to perform a job for which they are otherwise qualified. The Company makes, and will continue to make, reasonable accommodations to the known physical or mental limitations of an otherwise qualified applicant or employee to promote the employment of qualified individuals with disabilities and disabled veterans, unless such accommodations would impose an undue hardship on the operations of the Company's business.

As AECOM's Chairman and Chief Executive Officer, I am fully committed to the principles of equal employment opportunity and affirmative action. I have appointed EEO Officers responsible for supporting the successful implementation of the Company's Affirmative Action Plans (AAPs). Those EEO Officers work with Affirmative Action Coordinators at various locations of the Company, with joint responsibility for implementation of the Company's affirmative action activities. The EEO Officers and Affirmative Action Coordinators have the full support of top management and the staff necessary to fully implement this Program. All managers and supervisors will take an active part in the Company's AAPs to ensure qualified employees and prospective employees are considered and treated in a nondiscriminatory manner with respect to all employment decisions. Furthermore, AECOM will solicit the cooperation and support of all employees for the Company's Equal Employment Opportunity and Affirmative Action Policy.

Our Affirmative Action Plans include an audit and reporting system, which, among other things, uses metrics and other information to measure the effectiveness of our Programs. The Affirmative Action Coordinator is responsible for periodically reviewing progress in the compliance and implementation of the policy of affirmative action. In accordance with public law, the Company's program of affirmative action for qualified individuals with disabilities and the program of affirmative action for protected veterans are available for inspection in the Human Resources Department, Monday through Friday, from 9:00 a.m. to 5:00 p.m. upon request.

In addition, employees and applicants will not be subjected to harassment, intimidation, threats, coercion, or discrimination because they have engaged in, or may have engaged in, filing a complaint, assisting or participating in an investigation, compliance review or hearing, or other activity related to the administration of Section 503 of the Rehabilitation Act of 1973, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, Executive Order 11246, all as amended, and/or any other federal, state, or local law or regulation regarding Equal Employment Opportunity, opposing any act or practice made unlawful, or exercising any other right protected by such laws or regulations. AECOM will not discharge or in any other manner discriminate against employees or applicants because they have inquired about, discussed, or disclosed their own pay or the pay of another employee or applicant. However, employees who have access to the compensation information of other employees or applicants as part of their essential job functions cannot disclose the pay of other employees or applicants to individuals who do not otherwise have access to compensation information, unless the disclosure is (a) in response to a formal complaint or charge, (b) in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or (c) consistent with the contractor's legal duty to furnish information.

A handwritten signature in black ink, appearing to read "M. Burke", written in a cursive style.

Michael S. Burke

January 2019

Religious and National Origin Discrimination Policy

41 C.F.R. 60-50.1 – 60.50.5

Pursuant to the Company's equal employment opportunity and affirmative action policy, we have adopted the following policy prohibiting religious and national discrimination and harassment in the workplace. This policy applies to all terms and conditions of employment, including but not limited to, recruitment, hiring, promotion, transfer, demotion, layoff or recall from layoff, termination, wage and benefit administration, and selection for training or other employment opportunities. In furtherance of our commitment to ensuring equal employment opportunity regardless of national origin or religious beliefs, we will take the following steps, as appropriate:

- Recruit individuals for all positions without regard to their national origin or religious beliefs
- Review employment practices and personnel policies to ensure that applicants and employees are not discriminated against or harassed on the basis of religion or national origin
- Provide qualified employees with an equal opportunity to any available job without regard to their religion or national origin
- Administer employment opportunities, wages, hours, conditions of employment, retirement programs, and other employee benefits regardless of religion or national origin
- Develop written policies which prohibit unwelcome verbal or physical conduct based on religion or national origin and take reasonable steps to prevent such harassment occurring
- Explain the Company's commitment to equal employment opportunity to supervisors and employees and request their support
- Develop reasonable internal procedures to monitor our implementation of the Company's equal employment opportunity and affirmative action policy
- Inform all recruitment sources of the Company's commitment to equal employment opportunity and seek their assistance and support of AECOM Technical Services Inc.'s commitment to providing equal employment opportunity without regard to national origin or religion
- Endeavor to make reasonable accommodations to religious observations and practices of an employee or prospective employee unless doing so would pose an undue hardship on the Company's business.

Responsibility for Implementation

41 C.F.R. 60-2.17

Lisa Boecker, Sr. Director, Employee Relations and Compliance, has overall responsibility for implementation of the Equal Employment Opportunity Policy and the AAP. The Company has assigned primary management responsibility and accountability for ensuring full compliance with the Program to Todd David, the Affirmative Action Coordinator of the Company. As Affirmative Action Coordinator, Todd David has the authority, resources, support of and access to top management necessary to ensure the effective implementation of the AAP. The Sr. Director, Employee Relations and Compliance actively supports the program and provides assistance whenever it is needed, making managers and supervisors aware of the program and requesting their cooperation and assistance. The name of the Affirmative Action Coordinator appears on internal and external communications on the Company's Equal Employment Opportunity Policy and AAP.

With regard to the Louisville, KY AAP, Lisa Boecker works closely with Todd David to implement the programs which are specific to the Company. Todd David, together with the Human Resources staff, has primary responsibility for implementing programs at the Company.

The duties of the Affirmative Action Coordinator and designees include:

- Developing policy statements, AAPs, and internal and external modes of communication
- Overseeing regular discussions with local managers, supervisors, and employees to ensure the Company's policies are being followed
- Training personnel involved in the recruitment, screening, selection, promotion, disciplinary, and related processes to ensure the commitments in the Company's affirmative action program are implemented
- Advising supervisors that the Company is obligated to prevent discrimination and harassment of employees
- Identifying, in conjunction with line management any problem areas in implementing the AAP, and developing solutions
- Identifying any barriers to employment for protected individuals and assisting managers in developing solutions to ensure that all individuals benefit from equal employment opportunities
- Designing and implementing an internal audit and reporting system that will measure the effectiveness of the Company's Program, indicate the need for remedial action, determine the degree to which the Company's objectives have been attained, determine whether all employees have had the opportunity to participate in Company-sponsored educational, training, recreational, and social activities, and ensure each Company location is in compliance with applicable laws and regulations
- Serving as liaison between the Company and enforcement agencies, and between the Company and organizations of and for minorities or women
- Encouraging active involvement by Company representatives in the community service programs of local organizations of and for minorities and women
- Ensuring posters and notices are properly displayed or disseminated in ways that are

accessible and understandable to applicants and employees

- Keeping management informed of the latest developments in affirmative action.

The Company recognizes the cooperation of department supervisors and line managers is required to reach the full potential of this AAP. Therefore, supervisors and managers are expected to:

- Assist the Affirmative Action Coordinator in the identification of any problem areas and help eliminate any barriers to equal employment opportunity
- Whenever possible, become involved in local minority organizations, women's organizations, community action groups, and community service programs
- Work with the Affirmative Action Coordinator to periodically review hiring and promotion patterns and training programs to isolate impediments to the attainment of affirmative action placement goals and objectives. Results from these reviews are communicated through appropriate management meetings
- Review the qualifications of applicants and employees in a nondiscriminatory manner with regard to hire, promotion, transfer and termination
- Provide career counseling for employees as needed
- Adhere to the Company's policy of equal employment opportunity for all employees and ensure the policy is understood, supported, and adhered to by the employees they supervise
- Take action to prevent the discrimination and harassment of employees based on protected characteristics or due to a perception that an individual might have been the beneficiary of the Company's affirmative action efforts.

Organizational Profile

41 C.F.R. 60-2.11

As one of the diagnostic components of AECOM Technical Services Inc.'s AAP, and to conform to applicable regulations, the Company has completed a profile of the workforce at the Louisville, KY establishment. The organizational profile is an overview of the staffing patterns at this establishment, and is used to determine whether there are areas in the workforce where individuals are underrepresented or concentrated by gender or race. To complete our organizational profile we have elected to follow the Workforce Analysis methodology.

The following charts set forth our Workforce Analysis. The analysis identifies the departments at the Louisville, KY establishment and for each department lists all job titles from lowest to highest paid. For each job title, we provide the following data: the total number of incumbents, the total number of male and female incumbents, and the total number of male and female incumbents by racial/ethnic group.

We have included a chart identifying the employees included in this AAP who work at other AECOM Technical Services Inc. locations but are covered by this AAP, and those employees who work at locations covered by this AAP but who, in accordance with 41 C.F.R. 60-2.1, are included in another AECOM Technical Services Inc. AAP. This chart sets forth the locations where the employees are actually working and/or the AAP in which they are included.

Job Group Analysis

41 C.F.R. 60-2.12

As the second diagnostic component of our AAP we have conducted a job group analysis. The job group analysis is the first step in comparing the representation of minorities and women in the workforce covered by this AAP with the estimate of the available qualified minorities and women who could be employed by AECOM Technical Services Inc. in positions covered by this AAP.

In designing our job groups we considered similarities of duties and opportunities.

Although not a determinative factor in designing job groups, we also attempted to create job groups large enough to conduct appropriate analysis.

The following charts identify the job groups created for this AAP, the job titles that comprise each job group, and the percentage of minority incumbents and the percentage of female incumbents in each job group.

We have included a chart identifying the employees included in this AAP who work at other AECOM Technical Services Inc. locations and those employees who work at locations but are covered by this AAP covered by this AAP but who, in accordance with 41 C.F.R. 60-2.1, are included in another AECOM Technical Services Inc. AAP. This chart sets forth the locations where the employees are actually working and/or the AAP in which they are included.

Availability Analysis

41 C.F.R. 60-2.14

The availability analysis is a part of the Incumbency vs. Estimated Availability Analysis - the final diagnostic component of this AAP. The purpose of the availability analysis is to establish a benchmark against which the demographic composition of the Company's workforce may be compared to determine whether barriers to equal employment opportunity may exist within particular job groups.

Pursuant to applicable regulations, the availability analysis for each job group examines two potential areas of availability: individuals with the requisite skills outside the establishment (external availability) and those within the establishment who are promotable, transferable, and/or trainable (internal availability). In determining availability, we have selected our reasonable recruitment area and our pool of promotable, transferable, and trainable employees in such a way as not to exclude qualified minorities and women. Moreover, when determining external availability we have used as our source of data the most current and discrete statistical information available. For this availability analysis, we have used the EEO Tabulation 2006-2010 American Community Survey data. Finally, where a job group is composed of different job titles that carry different availability rates, we calculated a composite availability figure. We arrived at the composite availability figure by determining the proportion of the job group incumbents employed in each job title, weighting the availability for each job title by the proportion of incumbents employed in that title, and adding together the weighted availability estimates.

A brief written rationale for the selection of the recruitment areas and internal pools by job group follows:

1.2A - First/Mid Lvl Officials & Mgrs-Managerial

Factor 1: *Louisville/Jefferson County, KY-IN Metropolitan Statistical Area*- This is the geographical area from which the Company usually seeks or reasonably would seek workers to fill positions in job group 1.2A - First/Mid Lvl Officials & Mgrs-Managerial. This area was chosen based on current practices and was drawn in such a way as not to have the effect of excluding minorities or women.

Factor 2: *Feeder Job Computations*- There are no feeder positions for this job group.

2A - Professionals-Professional

Factor 1: *Louisville/Jefferson County, KY-IN Metropolitan Statistical Area*- This is the geographical area from which the Company usually seeks or reasonably would seek workers to fill positions in job group 2A - Professionals-Professional. This area was chosen based on current practices and was drawn in such a way as not to have the effect of excluding minorities or women.

Factor 2: *Feeder Job Computations*- There are no feeder positions for this job group.

2B - Professionals-Specialist

Factor 1: *Louisville/Jefferson County, KY-IN Metropolitan Statistical Area*- This is the geographical area from which the Company usually seeks or reasonably would seek workers to fill positions in job group 2B - Professionals-Specialist. This area was chosen based on current practices and was drawn in such a way as not to have the effect of excluding minorities or women.

Factor 2: *Feeder Job Computations*- There are no feeder positions for this job group.

3 - Technicians (Non-union)

Factor 1: *Louisville/Jefferson County, KY-IN Metropolitan Statistical Area*- This is the

geographical area from which the Company usually seeks or reasonably would seek workers to fill positions in job group 3 - Technicians (Non-union). This area was chosen based on current practices and was drawn in such a way as not to have the effect of excluding minorities or women.

Factor 2: *Feeder Job Computations*- There are no feeder positions for this job group.

5 - Admin. Support Workers (Non-Union)

Factor 1: *Louisville/Jefferson County, KY-IN Metropolitan Statistical Area*- This is the geographical area from which the Company usually seeks or reasonably would seek workers to fill positions in job group 5 - Admin. Support Workers (Non-Union). This area was chosen based on current practices and was drawn in such a way as not to have the effect of excluding minorities or women.

Factor 2: *Feeder Job Computations*- There are no feeder positions for this job group.

Comparison of Incumbency vs. Estimated Availability

41 C.F.R. 60-2.15

AECOM Technical Services Inc. has compared the representation of minorities and women in each job group with their representation among those identified in the availability analysis as available for employment in the job group. Where actual representation was less than the calculated availability, the Company determined whether the difference was greater than could reasonably be expected. The comparison of availability with actual representation follows:

Placement Goals

41 C.F.R. 60-2.16

As required by applicable regulations, AECOM Technical Services Inc. has established placement goals where the actual representation of women or minorities in a job group is less than would be reasonably expected based on calculated availability.

In establishing placement goals, we applied the following principles:

- When the percentage of minorities or women employed in a particular job group is less than would reasonably be expected, given their availability percentage in that job group, the Company established a percentage annual placement goal at least equal to the availability figure derived for women or minorities, as appropriate, for that job group.
- Placement goals are not quotas that must be met, nor are they to be considered as either a ceiling or a floor for the employment of particular groups.
- In all employment decisions, the Company makes selections in a nondiscriminatory manner. Placement goals do not provide a justification to extend a preference to any individual, select an individual, or adversely affect an individual's employment status, on the basis of that individual's sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or other characteristic protected by law.
- Placement goals do not create set-asides for specific groups, nor are they intended to achieve proportional representation or equal results.
- Placement goals are not used to supersede merit selection principles, nor do these placement goals require the Company to hire a person who lacks qualifications to perform the job successfully or hire a less qualified person in preference to a more qualified one.

As is described in more detail in the Action Oriented Program section of this AAP, where a placement goal is set, the Company will develop action oriented steps to increase the recruitment and training of minorities or women, or both.

Identification of Problem Areas by Organizational Unit and Job Group

41 C.F.R. 60-2.17(b)

We have conducted analyses of our total employment process, including evaluating the workforce by organizational unit and job group, personnel activity, compensation systems, and other personnel procedures to determine whether and where impediments to equal employment opportunity exist.

An analysis of each of these processes follows.

Composition of the Workforce by Organizational Unit

Of the 10 departments in this AAP, 5 or 50% include minorities, and 7 or 70% include females. Our analysis by organizational unit reveals that minorities and women are not significantly underrepresented or concentrated in any particular organizational unit. This analysis suggests that there is no policy or practice excluding minorities or women from any departments, nor is there any racial or sexual discrimination in the selection process.

Composition of the Workforce by Job Group

Pursuant to OFCCP regulations, we have conducted an availability analysis by job group, taking into account both external and internal availability, and have compared incumbency to estimated availability to determine placement goals. The descriptions of Factor 1 and Factor 2 by job group are summarized in the Availability Analysis. Our findings are as follows:

- Our analysis of incumbency vs. estimated availability indicates that in some cases, incumbency is less than estimated availability, however, our more detailed analysis concludes that there is no significant problem concerning minority utilization.
- Our analysis of incumbency vs. estimated availability indicates that in some cases, incumbency is less than estimated availability, however, our more detailed analysis concludes that there is no significant problem concerning female utilization.
- The Company has established affirmative action placement goals and programs to address any areas of underutilization, and will continue to make a good faith effort to reach the placement goals established by implementing action oriented programs, which are detailed elsewhere in this AAP.

Analysis of Progress Towards Prior Year Goals

In establishing placement goals, the following principles apply:

- When the percentage of minorities or women employed in a particular job group is less than would reasonably be expected given their availability percentage in that job group, the Company has established an annual percentage placement goal at least equal to the availability figure derived for women or minorities, as appropriate, for that job group.
- Placement goals are not quotas that must be met, nor are they to be considered as either a ceiling or a floor for the employment of particular groups.
- In all employment decisions, the Company makes selections in a nondiscriminatory manner. Placement goals do not provide a justification to extend a preference to any individual, select an individual, or adversely affect an individual's employment status, on the basis of that individual's sex, gender identity, sexual orientation, race,

color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law.

- Placement goals do not create set-asides for specific groups, nor are they intended to achieve proportional representation or equal results.
- Placement goals are not used to supersede merit selection principles, nor do these placement goals require the Company to hire a person who lacks qualifications to perform the job successfully or hire a less qualified person in preference to a more qualified one.

A review of progress and goal attainment for the period from January 01, 2018 to December 31, 2018 reveals that there are no prior year goals for minorities and women.

Personnel Activity

The Company has analyzed additional personnel activities to determine whether and where impediments to equal employment opportunity exist and whether there are significant selection disparities by race/ethnicity or gender. These activities include applicant flow, hires, promotions, terminations, and other personnel actions.

Applicant Flow

During the plan year, January 01, 2018 to December 31, 2018, the Company listed all non-executive positions lasting three days or more not expected to be filled from within the appropriate state employment service delivery system. The Company accepted applications for open positions, and all persons interested in obtaining employment with the Company were advised to apply according to the Company's current policy. Applications and complete records have been kept to ensure goals of equal employment opportunity are being applied to this reflecting process.

The Company believes applicant flow is not and will not be a problem area. Our analysis reveals that the percentage of minority and female applicants compares very favorably with the general availability in the respective categories. The Company's success in implementing and communicating affirmative action and outreach efforts.

The following report summarizes applicant flow by job group:

Hires

The Human Resources Department develops all procedures and all hiring at the Company is conducted on the basis of nondiscriminatory criteria. Specifically, the following criteria and procedures have resulted in hiring decisions that are free of discrimination:

- o Job descriptions have been reviewed and revised to make sure duties are accurately described, that the experience and education requirements are job related, and that all incumbents meet minimum job requirements. Job titles have and will continue to be written without regard to sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law.
- o Application forms have been reviewed to ensure all requested information is job related, and the forms comply with all applicable laws. In addition, all forms state the Company is an Equal Opportunity/Affirmative Action Employer.
- o AECOM Technical Services Inc. representatives who are involved in the selection process have been briefed on the Company's obligations.
- o Where applicable, tests have been reviewed and are administered and conducted in a non-discriminatory manner.
- o All employees are encouraged to refer qualified applicants to the Company for employment. In addition, the Company has formal recruitment procedures to apprise minority and women's groups, educational institutions, and other referral sources of openings.
- o Placing an applicant in a specific job in a department is the responsibility of management. Hiring decisions are based on the applicants knowledge, skills, abilities, and any other job related criteria.

A review of external hires for the prior plan year indicates that selection decisions were made in a non-discriminatory manner. There were 6 new employees hired during the period from January 01, 2018 to December 31, 2018 including 1 minority at 17% and 1 woman at 17%.

The following report summarizes hiring activity by job group:

Promotion Practices

A review of promotion data indicates these selection decisions are being made in a non-discriminatory manner. To ensure that such decisions are being made in a non-discriminatory manner, the following equal employment opportunity practices are in place:

- o The Company provides every reasonable opportunity for employees to advance. In this regard, training and other developmental opportunities are offered.
- o Employees are encouraged to contact their supervisor and/or the Human Resources Department, at any time, should they desire information relative to another position within the Company.
- o Management initiated promotions are based on performance and other job related criteria without discrimination on account of sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law
- o Most promotional opportunities are posted, providing all interested employees with an opportunity to apply and call their special skills to the attention of the manager.
- o The Company's career development program enables all employees to designate career paths and positions for which they wish to be considered.

A summary of promotion actions for the year is included on the following page:

Compensation Systems

As part of its affirmative action obligations, the Company has reviewed its compensation systems to determine whether those systems are being administered without regard to an individual's sex, race, ethnicity, or other characteristic protected by law. Our analysis did not identify any significant problem areas. If the Company discovers significant compensation system differences between individuals who are similarly situated, it will determine whether they are the result of legitimate, nondiscriminatory factors.

Terminations

The Company has evaluated its termination practices to determine whether there are disparities on the basis of sex, race or ethnicity. When terminations or reductions in force are necessary, the Company makes its decisions without regard to sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law.

A report summarizing terminations by job group follows:

Outreach Recruitment and Other Good Faith Efforts

AECOM Technical Services Inc. has reviewed its employment practices to determine whether its personnel programs are designed to effectively recruit and advance in employment protected individuals. While the Company believes there are no deficiencies in its current employment practices with respect to applicants and employees who are protected individuals, it engages in outreach, positive recruitment, and internal and external dissemination programs to augment its existing affirmative efforts. The Company engages in or has made plans to implement the following activities:

- Written notification of Company's affirmative action policy is sent to all subcontractors, including subcontracting vendors and suppliers, and requests appropriate action on their part. AECOM Technical Services Inc. makes the Equal Employment Opportunity Clause part of all covered contracts and purchase orders, and requires all qualified contractors and subcontractors to develop and maintain a written AAP.
- AECOM Technical Services Inc. advertisements or solicitations for prospective employees indicate that AECOM Technical Services Inc. is an equal opportunity employer.
- The Company will inform recruiting sources of AECOM Technical Services Inc.'s policy of affirmative action for protected individuals. Recruiting sources will be requested to actively recruit and refer qualified protected individuals for all positions.
- AECOM Technical Services Inc. will identify local organizations and/or community agencies known to specialize placing and/or developing training programs for protected individuals and send them notices of vacant positions. When appropriate, the Company will invite community service and other outreach partners to tour the office and discuss the Company, job recruitment needs, selection process, and other details related to recruitment and placement. In the event a partner is unable to schedule an on-site meeting, the Company will suggest a telephone meeting so they can better identify qualified individuals for our positions.
- When the Company recruits at colleges and universities, it will incorporate efforts to reach students who are covered by this AAP.
- The Company includes a copy of its Equal Employment Opportunity and Affirmative Action Policy Statement in its Policy Manual. When applicable, AECOM Technical Services Inc. publicizes the policy in Company publications. The policy is discussed in both new employee orientation and management training programs.
- AECOM Technical Services Inc.'s policy on equal employment opportunity and affirmative action is posted on Company bulletin boards. The posting includes a statement that employees and applicants are protected from coercion, intimidation, and interference or discrimination for filing a complaint or assisting in an investigation under Executive Order 11246, as amended. The Company also posts a copy of the policy in electronic format in a conspicuous location on the Company intranet, along with other employment forms, and otherwise ensures all off-site personnel have a copy of or the ability to view the policy

- The Company's employment application and electronic application processes include information about the AECOM Technical Services Inc.'s commitment to equal employment opportunity and affirmative action.
- All other required affirmative action notices and policy statements are posted on Company bulletin boards and are updated annually.
- Executives, management officials, supervisors, and other employees of the Company are encouraged to assist in the effort to disseminate AECOM Technical Services Inc.'s policy of affirmative action to appropriate individuals outside of the Company. Meetings with executive management and supervisory personnel will be conducted at least annually to explain the Company's policy of affirmative action, to make clear the Sr. Director, Employee Relations and Compliance's support for the policy, and to impart to these personnel their responsibility in making the AAP a success.
- AECOM Technical Services Inc. will seek to include individuals covered by this AAP when employees are pictured in consumer and personnel recruitment advertising.
- The Company will communicate to employees its obligation to take affirmative action to employ protected individuals and will encourage employee referral of covered applicants.
- An invitation to participate in AECOM Technical Services Inc.'s policy of affirmative action is disseminated to all applicants, as well as to all employees once the Company has extended a job offer, but before beginning employment duties.
- All personnel and employment records made or kept by the Company are retained for the required period as mandated by OFCCP regulations.
- The Company files annual EEO-1 and veteran employment reports with the appropriate agencies.

Development and Implementation of Action Oriented Programs

41 C.F.R. 60-2.17

The Company has developed and executed action oriented programs designed to correct any problem areas that may exist. These programs, which are listed below, demonstrate our good faith efforts to remove identified barriers, expand employment opportunities, and produce measurable results.

The Company has analyzed and will continue to analyze all positions and prepare written descriptions to accurately reflect position functions. Due to the use of a position description format, they are and will continue to be consistent for the same position from one organizational unit to another.

Job descriptions have been and will continue to be reviewed to determine the knowledge, skills, abilities, and other requirements necessary for the adequate performance of every job. Specifications will continue to be consistent for the same job title in all organizational units and will not contain any requirements that would result in discrimination on the basis of sex, gender, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law.

Job descriptions are available to incumbents and all members of management involved in the recruiting, screening, selection, and promotion process. Job descriptions are also made available to employees, applicants, and recruiting sources as appropriate.

The Company has carefully evaluated the total selection process and found it to be free from discrimination.

- We have instructed all supervisory personnel to ensure elimination of discrimination in all personnel actions in which they are involved.
- Any tests administered by the Company are job related and given to all applicants for applicable positions.
- Application forms do not contain questions with potential discriminatory effects.
- The Company does not and will not use any selection techniques that can be improperly used to discriminate against minority groups or women.

The Company has evaluated its techniques for improving recruitment and increasing the flow of qualified minority or female applicants through the following:

- Minority and women, as well as non-minority and male, employees are actively encouraged to refer applicants to our organization.
- The Company relies on the State Department of Employment as well as job fairs and recruiting programs sponsored by local community colleges and other community organizations.
- The Company provides an orientation program to inform new employees of their equal employment responsibilities, promotional opportunities, Company rules, ways to alleviate any problems that might arise, and any other issues related to affirmative action compliance.
- Local organizations will be contacted for referrals of potential minority and female employees.

- The Company utilizes the Internet to identify targeted recruitment sites for qualified minority and female applicants.
- Furthermore, we plan to take the following additional steps to ensure adequate representation of all minorities and women:
 - Where placement goals exist as defined by the OFCCP, we will continue to contact universities and two- and four-year local colleges, vocational technical schools, high schools, local business schools, and state and community organizations which attract qualified minority and female students. We will advise these institutions of our desire to fill job openings in these classifications with minority and female employees. When possible, we will continue to participate in job fair and career day activities and we will consider relevant work experience programs.
- We will continue to contact our normal sources of recruitment (e.g., State Employment) and advise them that under the AAP we are specifically seeking to employ minorities and/or women for job openings. During the period from January 01, 2018 to December 31, 2018, targeted recruitment activities were conducted.

The Company has implemented the following programs and procedures to guarantee minority and female employees are given equal opportunities for promotion:

- On-the-job training is provided to all qualified employees to assist them in developing the necessary knowledge and skills for promotion to higher level jobs. In addition, a tuition reimbursement benefit is also available to all qualified employees.
- The Company utilizes a formal performance evaluation program for all employees. In addition, management and supervisors are trained on the basic methodology of performance evaluation.
- Neither minority nor female employees are required to possess higher qualifications than those of the lowest qualified incumbent in the job for which they apply.
- Seniority practices are not a problem since the Company has no formal seniority system. Promotions are based on merit selection principles.
- We will continue to make opportunities for advancement into more stimulating positions widely known through our career development process and by encouraging minorities and women to take advantage of these opportunities.
- Special internal training programs are provided as necessary to ensure the achievement of our placement goals. Programs are offered to eligible employees without regard to sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by applicable law.
- We will continue to participate in targeted external training programs.

Internal Audit and Reporting System

41 C.F.R. 60-2.17

It is the responsibility of the Company's Affirmative Action Coordinator to monitor employment and personnel practices to ensure compliance with applicable regulations and adherence to the Company's Affirmative Action Policy, and to measure the effectiveness of AECOM Technical Services Inc.'s AAP.

The Company's audit and reporting system is designed and implemented to:

- Measure the effectiveness of the AAP
- Identify any need for remedial action
- Determine the degree to which the Company's objectives are being attained
- Determine whether protected individuals have had the full opportunity to equal employment and to participate in all Company sponsored educational, training, recreational, and social activities
- Measure the Company's compliance with the AAP's specific obligations
- Document the actions taken to monitor the Company's compliance with the AAP's specific obligations.

In order to measure the effectiveness of the AAP, Company may take the following actions:

- Audits its voluntary self-identification process to monitor the number of individuals who choose to self-identify and evaluates whether changes could be made to Company's self-identification process to encourage greater voluntary self-identification
- Monitors records of applicant flow, referrals, placements, rejected offers, training, transfers, promotions, terminations, and any layoffs or recalls to evaluate the degree to which equal employment opportunity and organizational objectives are being obtained
- Reports on the organization's progress towards equal employment opportunity, and any identified problem areas, to top management and those involved in the selection process, so that immediate and appropriate steps can be taken to resolve any issues
- Examines available utilization and benchmark data regarding protected individuals and develops action-oriented programs to address any areas of underutilization
- Reviews available data computations and analyses regarding applicants and hires
- Reviews the effectiveness of its recruitment and outreach activities
- Audits its communications with vendors and subcontractors to ensure that such communications reflect the Company's commitment to equal employment opportunity and affirmative action
- Audits its communications with applicants and employees to ensure that such communications reflect the Company's commitment to equal employment opportunity and affirmative action
- Audits its job listings to ensure that the postings reflect the Company's commitment to equal employment opportunity and affirmative action, and that such postings are timely

listed with the appropriate state employment delivery system

- Audits its personnel policies to ensure that such policies reflect the Company's commitment to equal employment opportunity and affirmative action
- Audits its personnel processes to ensure that individuals have equal opportunity in employment without regard to sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law
- Audits any mental and physical qualifications to ensure that they are job-related and consistent with business necessity

Where the affirmative action program is found to be deficient, Company shall endeavor to undertake necessary action to bring the program into compliance.

Conclusion

The AAP year, January 1, 2019 through December 31, 2019, shows a continued commitment to equal employment opportunity and affirmative action, and has strong plans to ensure both corporate and employee success.

Through its Affirmative Action Coordinator, Todd David, the Company will continue to communicate its policies, both within the organization and to the community in which it works. The Sr. Director, Employee Relations and Compliance affords the Affirmative Action Coordinator full authority to take action to implement the plan and to pursue solutions to problems that might impede the progress of this plan.

At the close of AECOM Technical Services Inc.'s most recent plan year, an analysis of the composition of the workforce was undertaken. The workforce was analyzed by job group and by department to determine the employment of minorities and women, and to identify if placement goals are indicated when compared to the appropriate available workforce. This analysis revealed no areas in which the difference between incumbency vs. estimated availability was statistically significant, showing that for the overwhelming majority of the workforce, employment levels of women and minorities are representative of our recruiting population. Nonetheless, the Company expects to continue its successful outreach efforts and to ensure all applicants and employees are treated fairly, based on job related criteria and without regard to sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by applicable law.

The Company is mindful of the fact that continued achievements in the area of equal employment opportunity and affirmative action are important. As a result, we have included additional action oriented plans and programs for recruiting, communication, and reporting, to ensure that our compliance with affirmative action continues in good stead.

Finally, it should be noted the Company's thorough analysis of its workforce reveals that AECOM Technical Services Inc. is in full compliance with sex discrimination guidelines and that there is no evidence of discrimination in any form against female employees. As outlined in this AAP, AECOM Technical Services Inc. is ready and willing to make affirmative action both a commitment and a continued reality.

**AFFIRMATIVE ACTION PROGRAM
FOR
PROTECTED VETERANS**

AECOM Technical Services Inc.

Louisville, KY

January 1, 2019 through December 31, 2019

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Preface

AECOM Technical Services Inc. (also referred to as the Company) is committed to the concept and practice of equal opportunity and affirmative action. In the preparation of this affirmative action program (AAP), we have been guided by the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended by the Jobs for Veterans Act of 2002 (38 U.S.C. § 4212), and its implementing OFCCP regulations (41 C.F.R. Part 60-300). Nothing contained in this AAP or its supporting data should be construed as an admission by the Company, in whole or in part, that it has contravened any federal, state, or local employment practice laws.

In developing and implementing this AAP, AECOM Technical Services Inc. has been guided by its established policy of providing equal employment opportunity. Nothing herein is intended to sanction the discriminatory treatment of any person. Thus, this AAP has been developed in strict reliance upon the Guidelines on Affirmative Action issued by the Equal Employment Opportunity Commission (EEOC) (29 C.F.R. Part 1608).

While the Company firmly believes in dissemination of its affirmative action policies and equal employment opportunity practices and makes the non-data components of this AAP available for review to employees and applicants upon request, the AAP remains a Company proprietary document. Moreover, the data on which the Company has relied in preparing this AAP are confidential and sensitive, and the Company believes release of the data would subject the Company to commercial harm. Therefore, the following is requested:

- If this AAP or any supporting data or documentation are submitted to Office of Federal Contract Compliance Programs (OFCCP) pursuant to the Executive Order, the Rehabilitation Act, The Vietnam Era Veterans' Readjustment Assistance Act and/or any implementing regulations (as any or all have been or may be amended), those documents and the information they contain are to be considered confidential and not subject to disclosure without notifying the Company of the agency's decision to disclose and providing the Company with ample time to contest the disclosure. Advance notice of disclosure should be sent to Todd David. The Company requests this information be treated as exempt from public disclosure under the Freedom of Information Act, 5 U.S.C. § 552.
- If this AAP or any supporting data or documentation is supplied by Company to another government contractor, EEOC or fair employment practices agency representatives, or any other person, it is not to be copied, reproduced, or disclosed by such persons without prior notification to the Company.
- No information contained in the AAP or any supporting data or documentation is to be copied, removed from the premises, or released to other individuals without a prior notification to and permission from the Company.
- Reports that require specific data, such as names of employees and salary information, are not an official part of this AAP. This information is on file at the Company as Documentation and Supporting Data for AAP Reports and is available for review only as required by law.

This AAP does not constitute an express or implied contract between the Company and its employees, job applicants, or other persons, nor does it change in any way the basic at will employment relationship all Company employees have with the Company. Nothing in this AAP creates a private right of action on behalf of any individual or group against the Company.



Statement of Commitment from AECOM's Chief Executive Officer

It is the policy of AECOM not to discriminate or allow the harassment of employees or applicants on the basis of sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law with regard to any employment practices, including recruitment, advertising, job application procedures, hiring, training, promotion, transfer, compensation, job assignments, benefits, and/or other terms, conditions of employment, provided the individual is qualified, with or without reasonable accommodations, to perform the essential functions of the job. This policy applies to all jobs at the Company. The Company will continue to ensure that individuals are employed, and that employees are treated during employment, without regard to their sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law in all employment practices as follows:

Employment decisions at the Company are based on legitimate job-related criteria. All personnel actions or programs that affect qualified individuals, such as employment, promotion, demotion, transfer, recruitment, advertising, termination, rate of pay or other forms of compensation, and selection for training, are made without discrimination because of any basis protected by law. Employees may choose to voluntarily disclose their sex, race, national origin, disability and protected veteran status at any time by contacting Human Resources. Such information will be maintained in a confidential manner and will not be used against an individual when making any employment decisions. Employees and applicants with disabilities and disabled veterans are encouraged to inform Human Resources if they need a reasonable accommodation to perform a job for which they are otherwise qualified. The Company makes, and will continue to make, reasonable accommodations to the known physical or mental limitations of an otherwise qualified applicant or employee to promote the employment of qualified individuals with disabilities and disabled veterans, unless such accommodations would impose an undue hardship on the operations of the Company's business.

As AECOM's Chairman and Chief Executive Officer, I am fully committed to the principles of equal employment opportunity and affirmative action. I have appointed EEO Officers responsible for supporting the successful implementation of the Company's Affirmative Action Plans (AAPs). Those EEO Officers work with Affirmative Action Coordinators at various locations of the Company, with joint responsibility for implementation of the Company's affirmative action activities. The EEO Officers and Affirmative Action Coordinators have the full support of top management and the staff necessary to fully implement this Program. All managers and supervisors will take an active part in the Company's AAPs to ensure qualified employees and prospective employees are considered and treated in a nondiscriminatory manner with respect to all employment decisions. Furthermore, AECOM will solicit the cooperation and support of all employees for the Company's Equal Employment Opportunity and Affirmative Action Policy.

Our Affirmative Action Plans include an audit and reporting system, which, among other things, uses metrics and other information to measure the effectiveness of our Programs. The Affirmative Action Coordinator is responsible for periodically reviewing progress in the compliance and implementation of the policy of affirmative action. In accordance with public law, the Company's program of affirmative action for qualified individuals with disabilities and the program of affirmative action for protected veterans are available for inspection in the Human Resources Department, Monday through Friday, from 9:00 a.m. to 5:00 p.m. upon request.

In addition, employees and applicants will not be subjected to harassment, intimidation, threats, coercion, or discrimination because they have engaged in, or may have engaged in, filing a complaint, assisting or participating in an investigation, compliance review or hearing, or other activity related to the administration of Section 503 of the Rehabilitation Act of 1973, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, Executive Order 11246, all as amended, and/or any other federal, state, or local law or regulation regarding Equal Employment Opportunity, opposing any act or practice made unlawful, or exercising any other right protected by such laws or regulations. AECOM will not discharge or in any other manner discriminate against employees or applicants because they have inquired about, discussed, or disclosed their own pay or the pay of another employee or applicant. However, employees who have access to the compensation information of other employees or applicants as part of their essential job functions cannot disclose the pay of other employees or applicants to individuals who do not otherwise have access to compensation information, unless the disclosure is (a) in response to a formal complaint or charge, (b) in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or (c) consistent with the contractor's legal duty to furnish information.



Michael S. Burke

January 2019

Definitions
41 C.F.R. 60-300.2

“DISABLED VETERAN” is (1) A veteran of the U.S. military, ground, naval, or air service who is entitled to compensation (or who but for the receipt of military retired pay would be entitled to compensation) under laws administered by the Secretary of Veterans Affairs, or (2) A person who was discharged or released from active duty because of a service connected disability.

“QUALIFIED DISABLED VETERAN” means a disabled veteran as defined above who has the ability to perform the essential functions of the employment position at issue with or without reasonable accommodation.

“RECENTLY SEPARATED VETERAN” means any veteran during the three-year period beginning on the date of such veteran's discharge or release from active duty in the U.S. military, ground, naval or air service.

“ARMED FORCES SERVICE MEDAL VETERAN” is any veteran who, while serving on active duty in the U.S. military, ground, naval or air service, participated in a United States military operation for which an Armed Forces service medal was awarded pursuant to Executive Order 12985.

“ACTIVE DUTY WARTIME OR CAMPAIGN BADGE VETERAN” means a veteran who served on active duty in the U.S. military, ground, naval or air service during a war or in a campaign or expedition for which a campaign badge has been authorized, under the laws administered by the Department of Defense.

“PROTECTED VETERANS” means Disabled Veterans, Recently Separated Veterans, Armed Forces Service Medal Veterans, and Active Duty Wartime or Campaign Badge Veterans.

Responsibility for Implementation

41 C.F.R. 60-300.44(i)

Lisa Boecker, Sr. Director, Employee Relations and Compliance, has overall responsibility for implementation of the Equal Employment Opportunity Policy and the AAP. The Company has assigned primary management responsibility and accountability for ensuring full compliance with the Program to Todd David. The Affirmative Action Coordinator, Todd David, has the authority, resources, support of and access to top management necessary to ensure the effective implementation of the AAP. The Sr. Director, Employee Relations and Compliance actively supports the program and provides assistance whenever it is needed, making managers and supervisors aware of the program and requesting their cooperation and assistance. The identity of the Affirmative Action Coordinator appears on internal and external communications regarding the Company's Equal Employment Opportunity Policy and AAP.

With regard to the Company AAP, Lisa Boecker works closely with Todd David to implement the programs which are specific to the Company. Todd David, together with the Human Resources staff, has primary responsibility for implementing programs at the Company.

The duties of the Affirmative Action Coordinator and designees include:

- Developing policy statements, AAPs, and internal and external modes of communication
- Overseeing regular discussions with local managers, supervisors, and employees to ensure the Company's policies are being followed
- Training personnel involved in the recruitment, screening, selection, promotion, disciplinary, and related processes to ensure the commitments in the Company's affirmative action program are implemented
- Advising supervisors their affirmative action efforts and results are a component of their performance evaluations, and the Company is obligated to prevent discrimination and harassment of employees
- Identifying, in conjunction with line management any problem areas in implementing the AAP, and developing solutions
- Identifying any barriers to employment for protected veterans, including those with known disabilities, and assisting managers in developing reasonable accommodations to ensure that individuals with disabilities benefit from equal employment opportunities
- Designing and implementing an internal audit and reporting system that will measure the effectiveness of the Company's Program, indicate the need for remedial action, determine the degree to which the Company's objectives have been attained, determine whether employees who are protected veterans have had the opportunity to participate in Company-sponsored educational, training, recreational, and social activities, and ensure each Company location is in compliance with applicable laws and regulations
- Serving as liaison between the Company and enforcement agencies, and between the Company and organizations of and for protected veterans
- Encouraging active involvement by Company representatives in the community service programs of local organizations of and for protected veterans

- Ensuring posters and notices are properly displayed or disseminated in ways that are accessible and understandable to applicants and employees and
- Keeping management informed of the latest developments in affirmative action.

The responsibilities of managers and supervisors under this AAP include:

- Taking action to prevent the discrimination and harassment of employees
- Ensuring their departments fully comply with the spirit and letter of the affirmative action program and policies
- Reviewing the qualifications of all applicants and employees to make sure qualified individuals are treated in a nondiscriminatory manner with regard to hire, promotion, transfer, and termination
- Reviewing the job performance of each employee to assess whether personnel actions are justified based on the employee's performance of his or her job duties and responsibilities and
- Working with the Affirmative Action Coordinator or Human Resources Manager and qualified veteran employees or applicants with known disabilities to determine appropriate reasonable accommodations if they are necessary for performance of the job and/or recruitment process.

Request for Self-Identification

41 C.F.R. 60-300.42

In order to notify applicants and employees of the existence of and the opportunity to participate in this affirmative action program and to provide sufficient data to allow AECOM Technical Services Inc. to measure and improve, if necessary, the effectiveness of the Company's affirmative action efforts, AECOM Technical Services Inc. invites applicants and employees to complete an invitation to self-identify status as a protected veteran as follows:

- When an applicant applies or is considered for employment, the Company invites the applicant to self-identify race, ethnicity, sex, veteran, and disabled status.
- Following an offer of employment but before the individual begins his/her job duties, the Company again invites the individual to self-identify race, ethnicity, sex, veteran, and disabled status.

The Company keeps all self-identification information confidential and maintains it in a data analysis file rather than in individual employee personnel or medical files.

Review of Personnel Policies

41 C.F.R. 60-300.44(b)

AECOM Technical Services Inc. periodically reviews its personnel procedures to determine whether they ensure the careful, thorough, and systematic consideration of the job qualifications of employees or job applicants who are protected veterans for jobs filled either through vacancy or promotion and for educational or training opportunities. The Company ensures that its personnel processes facilitate the implementation of the Affirmative Action Program.

Vacancies are advertised, and applications are accepted from any interested person. AECOM Technical Services Inc.'s employment application, the Careers section of its website, and all advertisements include a link to the non-discrimination statement to further assure applicants of the Company's policy of equal employment opportunity. An EEO statement will be included in other recruitment literature should the Company use such documents in the future. All non-executive positions lasting three days or more not expected to fill from within will be referred to the appropriate state employment service delivery system. In addition, to ensure protected veterans are aware of our openings, the Company will send vacancy announcements to the sources listed in the Outreach, Positive Recruitment, and External Dissemination of Policy section of this Affirmative Action Program.

The Company ensures its personnel processes do not limit, segregate, or classify an employee or job applicant in a way that adversely affects employment opportunities or status on the basis of status as a protected veteran. The Company makes sure when a protected veteran is considered for an employment opportunity, the Company relies only on that portion of the individual's military record, including his or her discharge papers, relevant to the requirements of the opportunity at issue. The Company periodically reviews any physical and mental job qualifications to ensure they do not tend to screen out disabled veterans for reasons that are not job related or consistent with business necessity, or do not relate to ensuring the safe performance of the essential functions of the job. The Company makes any necessary modifications to ensure applicants and employees receive equal opportunity in the operation of all personnel processes, and protected veterans are not stereotyped in a manner that limits their access to jobs for which they are qualified.

The Company ensures applicants and employees who are protected veterans and who meet job qualifications have equal access to its personnel process, including those implemented through information and communication technologies, and provides necessary reasonable accommodation to make sure applicants and employees who are disabled veterans receive equal opportunity in the operation of all personnel processes.

Review of Physical and Mental Job Requirements

41 C.F.R. 60-300.44(c)

AECOM Technical Services Inc. reviews physical and mental job qualification requirements as job qualification requirements are established or revised to ensure qualification requirements do not screen out qualified individuals with disabilities or qualified disabled veterans for reasons that are not job related or consistent with business necessity and the safe performance of the essential functions of the job. This review occurs at regular intervals throughout each calendar year, such as when a job may be advertised or filled through hiring or promotion, when the duties of a position are significantly revised, and when considering requests for reasonable accommodation related to the performance of the functions of the position.

AECOM Technical Services Inc. also regularly reviews its personnel processes to ensure any medical exams or inquiries are conducted in accordance with the Section 503 regulations. Information regarding the medical condition or history of an individual obtained as a result of any such inquiry or exam is collected and maintained on separate forms and in separate medical files and treated as a confidential medical record.

To the extent any physical or mental job qualification measurements are found to potentially screen out qualified individuals with disabilities or qualified disabled veterans in the selection of employees or applicants for employment or in other changes in employment status such as promotion or training, AECOM Technical Services Inc. will ensure the requirements are related to the specific job(s) for which the individual is being considered and are consistent with business necessity and the safe performance of the job.

To date, no qualification requirements have been identified that are likely to have a screening effect. All job qualification requirements have been found to be job related, consistent with business necessity, or required for the safe performance of the job.

Reasonable Accommodations

41 C.F.R. 60-300.44(d)

AECOM Technical Services Inc. has made and will continue to make reasonable accommodations, which do not impose undue hardship on its business, to the known physical and mental limitations of otherwise qualified employees and job applicants who are disabled veterans.

Included among the specific accommodations for qualified disabled veterans that may have been implemented are the following:

- Short- and long-term disability programs provide pay for eligible employees absent due to disability.
- A personal leave policy enables eligible employees to accumulate paid time off to be used for medical appointments or personal illness.
- A medical leave of absence may be available to any employee who provides medical documentation of disability, where the requested absence constitutes a reasonable accommodation.
- Adaptive equipment, such as supportive desk chairs, special computer monitors and/or keyboards, is made available when necessary to enable an employee to perform an essential job function.
- Should reasonable accommodations be necessary to facilitate access to work areas by qualified employees or applicants who are known disabled veterans, the Company will take reasonable steps to provide such accommodations.
- If necessary to accommodate a veteran with a known disability, the Company will remove or alter nonessential job functions, unless doing so creates an undue hardship.
- The Company will provide alternative work schedules if needed due to disability where that arrangement constitutes a reasonable accommodation.
- Company will accommodate employees who are veterans with known disabilities by allowing a reasonable amount of time off for physicians' visits.
- Special parking for veterans with known disabilities is available at AECOM Technical Services Inc..
- The Company's online application system makes clear to all applicants if they are unable to fully use the automated system, they may follow specified alternate procedures so they receive equal opportunity to apply for and be fully considered for all jobs.
- The Company has designed its online application system and its internal information and communication technologies to increase the accessibility of those systems.

If a veteran has a disability, the Company encourages the individual to disclose (i) any special methods, skills, and procedures which qualify him or her for positions which he or she might not otherwise be able to do, so that he or she can be considered for any position of that kind, and (ii) the reasonable accommodations which would enable the individual to perform the job properly and safely. Such accommodations may include special equipment, changes in the physical layout of the job, elimination of certain nonessential duties related to the job, or other

reasonable accommodations.

The Company informs employees and applicants of its desire to discuss reasonable accommodations in various ways, including through the Policy Statement and on the Invitation to Self-Identify. Both the Policy Statement and the Invitation to Self-Identify are provided to employees and applicants, and posted for employees to view. Individuals interested in discussing accommodations may contact Todd David, the Affirmative Action Coordinator, the Human Resources Department, and/or the individual's supervisor. Managers and supervisors are trained to ensure they know what to do if an employee or applicant makes a request for a reasonable accommodation so that such requests are processed swiftly.

Where an employee who is known to be a veteran with a disability is having significant difficulty performing their job and the Company reasonably concludes the performance issues may be related to the known disability, the Company may notify the employee of the performance problem and confidentially inquire whether the problem is related to the employee's disability. If the employee indicates their disability is impacting performance, the Company will engage in confidential discussions with the employee regarding whether the employee requires reasonable accommodations to improve performance.

Compensation
41 C.F.R. 60-300.21(i)

In offering employment or promotions, AECOM Technical Services Inc. does not reduce the amount of compensation offered to protected veterans because of any disability income, pension, or other benefit the employee receives from another source. Similarly, the Company does not reduce the amount of compensation offered to an employee or applicant because of the actual or anticipated cost of a reasonable accommodation needed, requested, or anticipated.

Internal Communication Procedure

The Company has developed an internal communication procedure whereby all employees, including protected veterans, can raise any issues or claims that may arise during the course of their employment. General communications procedures encourage any and all employees, including protected veterans, to discuss such issues or claims. All matters brought to the attention of the Affirmative Action Coordinator will be confidentially addressed.

Harassment
41 C.F.R. 60-300.44(e)

AECOM Technical Services Inc. has developed and implemented policies and procedures to ensure employees who are protected veterans are not harassed because of their veteran status.

A copy of the Company's Equal Employment Opportunity and Affirmative Action Policy Statement forbidding harassment against individuals based on protected characteristics is included in this AAP.

Training
41 C.F.R. 60-300.44(j)

The Company trains personnel involved in the recruitment, screening, selection, promotion, disciplinary, and related processes to ensure the commitments in the Company's AAP are implemented.

Internal Dissemination of Policy

41 C.F.R. 60-300.44(g)

The Company recognizes that, however strong its outreach program, internal support from supervisory management and other employees is necessary to ensure maximum effectiveness of its AAP for protected veterans. So that these employees' awareness of the needs of protected veterans can be increased and employee participation in the program is increased, the Company will utilize the following procedures to maximize the internal implementation and dissemination of its Equal Employment Opportunity and Affirmative Action Policy:

- The Company includes a copy of the policy statement in its Policy Manual.
- AECOM Technical Services Inc.'s policy on equal employment opportunity and affirmative action for protected veterans is posted on Company bulletin boards. The posting includes a statement that employees and applicants are protected from coercion, intimidation, and interference or discrimination for filing a complaint or assisting in an investigation under the Vietnam Era Veterans Readjustment Assistance Act of 1974, as amended.
- The Company posts a copy of the policy in electronic format in a conspicuous location on the Company intranet, along with other employment forms, and otherwise ensures all off-site personnel have a copy of or the ability to view the policy.
- The Company's electronic applicant process includes information about the Company's commitment to equal employment opportunity and affirmative action.
- The Company will communicate to employees its obligation to take affirmative action to employ qualified protected veterans and will encourage employee referral of covered applicants.
- AECOM Technical Services Inc. will invite employees who are protected veterans to participate in the AAP.
- Meetings with executive management and supervisory personnel will be conducted at least annually to explain the Company's policy of affirmative action, to make clear the CEO's support for the policy, and to impart to these personnel their responsibility in making the AAP a success.
- An invitation to participate in AECOM Technical Services Inc.'s policy of affirmative action is disseminated to all applicants, as well as to all employees once the Company has extended a job offer, but before beginning employment duties.
- When applicable, AECOM Technical Services Inc. publicizes the policy in Company publications.
- The policy is discussed in both new employee orientation and management training programs.
- When applicable, Company publications include articles on accomplishments of all employees, including protected veterans.

If the Company has or becomes party to collective bargaining agreements, union officials will be informed the Company is bound by the terms of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, and is committed to take affirmative action to employ and advance in employment protected veterans, and the Company will not discriminate

against protected veterans. For those sites not subject to a collective bargaining agreement, no notification of union officials is necessary.

Outreach, Positive Recruitment and External Dissemination of Policy

41 C.F.R. 60-300.44(f)

AECOM Technical Services Inc. has reviewed its employment practices to determine whether its personnel programs are designed to effectively recruit and advance in employment protected veterans. While the Company believes there are no deficiencies in its current employment practices with respect to applicants and employees who are protected veterans, it engages in outreach, positive recruitment, and external dissemination programs to augment its existing affirmative efforts. For example, the Company sends written notification of its affirmative action policy to all subcontractors, including subcontracting vendors and suppliers, and requests appropriate action on their part. In addition, the Company engages in or has made plans to implement the following activities:

- AECOM Technical Services Inc. makes the Equal Employment Opportunity Clause part of all covered contracts and purchase orders.
- The Company posts all job vacancies (other than some executive and senior management positions or positions lasting three days or less) for which it considers outside applicants with the state workforce agency job bank or local employment delivery system where the opening occurs. These postings occur before or concurrently with the use of other recruitment efforts to fill the job and are provided in the manner and format specified by the relevant agency that will allow the agency to provide priority referral of protected veterans.
- AECOM Technical Services Inc. has notified the employment service delivery system in each state where it has establishments that it is a federal contractor and it desires priority referrals of protected veterans for job openings in that state. The Company also provided the employment service delivery system with the name and location of all hiring locations within the state and the contact information for an employee who can answer questions about such job listings. The notice also included the names and contact information for job search organizations the Company uses to assist in hiring, if any. If any of the information in this disclosure changes, the Company sends an update with the next relevant job listing.
- Executives, management officials, supervisors, and other employees of the Company are encouraged to assist in the effort to disseminate AECOM Technical Services Inc.'s policy of affirmative action to appropriate individuals outside of the Company.
- The Company will inform recruiting sources of AECOM Technical Services Inc.'s policy of affirmative action for protected veterans. Recruiting sources will be requested to actively recruit and refer qualified protected veterans for all positions.
- AECOM Technical Services Inc. will identify local organizations and/or community agencies known to specialize placing and/or developing training programs for protected veterans and send them notices of vacant positions. Examples of these outreach efforts include:
 - Veterans' Employment Representative in the employment service center near the facilities covered in this AAP
 - Department of Veterans Affairs Regional office near the facilities covered in this AAP
 - Veterans' coordinators on campuses where the Company normally recruits

- Other recruitment sources that specialize in placement of protected veterans
- When appropriate, the Company will invite community service and other outreach partners to tour the office and discuss the Company, job recruitment needs, selection process, and other details related to recruitment and placement. In the event a partner is unable to schedule an on-site meeting, the Company will suggest a telephone meeting so they can better identify qualified individuals for our positions.
- When the Company recruits at colleges and universities, it will incorporate efforts to reach students who are protected veterans.
- AECOM Technical Services Inc. will seek to include protected veterans when employees are pictured in consumer and personnel recruitment advertising.
- AECOM Technical Services Inc. makes reasonable accommodations for qualified veterans with disabilities.
- AECOM Technical Services Inc. advertisements or solicitations for prospective employees indicate that the Company is an equal opportunity employer.
- As described in more detail in Exhibit A, AECOM Technical Services Inc. evaluates the effectiveness of its outreach and recruitment efforts to determine if its affirmative action objectives are being met, and makes appropriate changes.

Data Collection Analysis

41 C.F.R. 60-300.44(k)

AECOM Technical Services Inc. documents computations or comparisons pertaining to applicants and hires on an annual basis and maintains the documentation for a period of three years.

Hiring Benchmarks

41 C.F.R. 60-300.45

In establishing a hiring benchmark, the following principles apply:

- The purpose of establishing a hiring benchmark is to provide the Company with a quantifiable method by which it can measure its progress toward achieving equal employment opportunity for protected veterans.
- The hiring benchmark is not a quota that must be met, nor is it a ceiling that limits or restricts the employment of protected veterans.
- In all employment decisions, the Company makes selections in a nondiscriminatory manner. Hiring benchmarks do not provide a justification to extend a preference to any individual, select an individual, or adversely affect an individual's employment status, on the basis of that individual's veteran status.
- Hiring benchmarks do not create set-asides for specific groups, nor are they intended to achieve proportional representation or equal results.
- Hiring benchmarks are not used to supersede merit selection principles, nor do they require the Company to hire a person who lacks qualifications to perform the job successfully or hire a less qualified person in preference to a more qualified one.
- A finding that the hiring benchmark has not been attained does not constitute either a finding or admission of discrimination.

AECOM Technical Services Inc. has established its benchmark in accordance with the national percentage of veterans in the civilian labor force as published on the OFCCP website. As of January 01, 2019, this benchmark percentage is 6.4 percent.

Monitoring and Reporting Systems

41 C.F.R. 60-300.44(h)

It is the responsibility of the Company's Affirmative Action Coordinator to monitor employment and personnel practices to ensure compliance with applicable regulations and adherence to the Company's Statement of Policy, to report specific problems to the appropriate management personnel, and to measure the effectiveness of AECOM Technical Services Inc.'s AAP.

The Company's audit and reporting system is designed and implemented to:

- Measure the effectiveness of the AAP
- Identify any need for remedial action
- Determine the degree to which the Company's objectives are being attained
- Determine whether individuals who are known protected veterans have had the full opportunity to participate in all Company sponsored educational, training, recreational and social activities
- Measure the Company's compliance with the AAP's specific obligations, and
- Document the actions taken to monitor the Company's compliance with the AAP's specific obligations.

In order to measure the effectiveness of the AAP, the Company may take the following actions:

- Audit its voluntary self-identification process to monitor the number of protected veterans who choose to self-identify and evaluates whether changes could be made to Company's self-identification process to encourage greater voluntary self-identification by protected veterans
- Establish a hiring benchmark to measure its progress towards achieving equal employment opportunity for protected veterans
- Review available data computations and analyses regarding applicants and hires
- Review the effectiveness of its recruitment and outreach activities
- Regularly assess its personnel processes to ensure that protected veterans have equal opportunity in employment
- Use a schedule to regularly assess any mental and physical qualifications to ensure that they are job-related and consistent with business necessity
- Audit its communications with vendors and subcontractors to ensure that such communications reflect the Company's commitment to equal employment opportunity and affirmative action for protected veterans
- Audit its communications with applicants and employees to ensure that such communications reflect the Company's commitment to equal employment opportunity and affirmative action for protected veterans
- Audit its job listings to ensure that the postings reflect the Company's commitment to equal employment opportunity and affirmative action for protected veterans, and

- Audit its personnel policies to ensure that such policies reflect the Company's commitment to equal employment opportunity and affirmative action for protected veterans.

Where the affirmative action program is found to be deficient, the Company shall endeavor to undertake necessary action to bring the program into compliance.

List of Exhibits

Exhibit A – Annual Assessment of Outreach and Recruiting Efforts

Exhibit A - Annual Assessment of Outreach and Recruiting Efforts

AECOM Technical Services Inc. evaluates available data regarding the effectiveness of its outreach and recruitment efforts on an annual basis. For areas where the Company concludes the totality of its efforts were not effective in identifying and recruiting qualified protected veterans, AECOM Technical Services Inc. will identify and implement alternative efforts.

Criteria used to evaluate the effectiveness of outreach efforts may include:

- Available data regarding applicants and hires, including the AECOM Technical Services Inc.'s established veteran hiring benchmark.
- Whether the activity expanded AECOM Technical Services Inc.'s outreach to protected veterans.
- Whether the activity increased the Company's ability to include protected veterans in its workforce.
- Whether the activity attracted qualified protected veterans.
- Whether the activity resulted in the selection of qualified protected veterans.

The Company will continue to monitor and review outreach sources to evaluate the effectiveness of outreach and recruitment efforts.

**AFFIRMATIVE ACTION PROGRAM
FOR
INDIVIDUALS WITH DISABILITIES**

AECOM Technical Services Inc.

Louisville, KY

January 1, 2019 through December 31, 2019

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Preface

AECOM Technical Services Inc. (also referred to as the Company) is committed to the concept and practice of equal opportunity and affirmative action. In the preparation of this Affirmative Action Program (AAP), we have been guided by Section 503 of the Rehabilitation Act of 1973 (as amended) (29 U.S.C. § 793) and its implementing regulations (41 C.F.R. Part 60-741). Nothing contained in this AAP or its supporting data should be construed as an admission by the Company, in whole or in part, that it has contravened any federal, state, or local employment practice laws.

In developing and implementing this AAP, AECOM Technical Services Inc. has been guided by its established policy of providing equal employment opportunity. Nothing herein is intended to sanction the discriminatory treatment of any person. Thus, this AAP has been developed in strict reliance upon the Guidelines on Affirmative Action issued by the Equal Employment Opportunity Commission ("EEOC") (29 C.F.R. Part 1608).

While the Company firmly believes in dissemination of its affirmative action policies and equal employment opportunity practices and makes the non-data components of this AAP available for review to employees and applicants upon request, the AAP remains a Company proprietary document. Moreover, the data on which the Company has relied in preparing this AAP are confidential and sensitive, and the Company believes release of the data would subject the Company to commercial harm. Therefore, the following is requested:

- If this AAP or any supporting data or documentation are submitted to Office of Federal Contract Compliance Programs (OFCCP) pursuant to the Executive Order, the Rehabilitation Act, The Vietnam Era Veterans' Readjustment Assistance Act and/or any implementing regulations (as any or all have been or may be amended), those documents and the information they contain are to be considered confidential and not subject to disclosure without notifying the Company of the agency's decision to disclose and providing the Company with ample time to contest the disclosure. Advance notice of disclosure should be sent to Todd David. The Company requests this information be treated as exempt from public disclosure under the Freedom of Information Act, 5 U.S.C. § 552.
- If this AAP or any supporting data or documentation is supplied by Company to another government contractor, EEOC or fair employment practices agency representatives, or any other person, it is not to be copied, reproduced, or disclosed by such persons without prior notification to the Company.
- No information contained in the AAP or any supporting data or documentation is to be copied, removed from the premises, or released to other individuals without a prior notification to and permission from the Company.
- Reports that require specific data, such as names of employees and salary information, are not an official part of this AAP. This information is on file at the Company as Documentation and Supporting Data for AAP Reports and is available for review only as required by law.

This AAP does not constitute an express or implied contract between the Company and its employees, job applicants, or other persons, nor does it change in any way the basic at will employment relationship all Company employees have with the Company. Nothing in this AAP creates a private right of action on behalf of any individual or group against the Company.



Statement of Commitment from AECOM's Chief Executive Officer

It is the policy of AECOM not to discriminate or allow the harassment of employees or applicants on the basis of sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law with regard to any employment practices, including recruitment, advertising, job application procedures, hiring, training, promotion, transfer, compensation, job assignments, benefits, and/or other terms, conditions of employment, provided the individual is qualified, with or without reasonable accommodations, to perform the essential functions of the job. This policy applies to all jobs at the Company. The Company will continue to ensure that individuals are employed, and that employees are treated during employment, without regard to their sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, protected veteran status, or any other characteristic protected by law in all employment practices as follows:

Employment decisions at the Company are based on legitimate job-related criteria. All personnel actions or programs that affect qualified individuals, such as employment, promotion, demotion, transfer, recruitment, advertising, termination, rate of pay or other forms of compensation, and selection for training, are made without discrimination because of any basis protected by law. Employees may choose to voluntarily disclose their sex, race, national origin, disability and protected veteran status at any time by contacting Human Resources. Such information will be maintained in a confidential manner and will not be used against an individual when making any employment decisions. Employees and applicants with disabilities and disabled veterans are encouraged to inform Human Resources if they need a reasonable accommodation to perform a job for which they are otherwise qualified. The Company makes, and will continue to make, reasonable accommodations to the known physical or mental limitations of an otherwise qualified applicant or employee to promote the employment of qualified individuals with disabilities and disabled veterans, unless such accommodations would impose an undue hardship on the operations of the Company's business.

As AECOM's Chairman and Chief Executive Officer, I am fully committed to the principles of equal employment opportunity and affirmative action. I have appointed EEO Officers responsible for supporting the successful implementation of the Company's Affirmative Action Plans (AAPs). Those EEO Officers work with Affirmative Action Coordinators at various locations of the Company, with joint responsibility for implementation of the Company's affirmative action activities. The EEO Officers and Affirmative Action Coordinators have the full support of top management and the staff necessary to fully implement this Program. All managers and supervisors will take an active part in the Company's AAPs to ensure qualified employees and prospective employees are considered and treated in a nondiscriminatory manner with respect to all employment decisions. Furthermore, AECOM will solicit the cooperation and support of all employees for the Company's Equal Employment Opportunity and Affirmative Action Policy.

Our Affirmative Action Plans include an audit and reporting system, which, among other things, uses metrics and other information to measure the effectiveness of our Programs. The Affirmative Action Coordinator is responsible for periodically reviewing progress in the compliance and implementation of the policy of affirmative action. In accordance with public law, the Company's program of affirmative action for qualified individuals with disabilities and the program of affirmative action for protected veterans are available for inspection in the Human Resources Department, Monday through Friday, from 9:00 a.m. to 5:00 p.m. upon request.

In addition, employees and applicants will not be subjected to harassment, intimidation, threats, coercion, or discrimination because they have engaged in, or may have engaged in, filing a complaint, assisting or participating in an investigation, compliance review or hearing, or other activity related to the administration of Section 503 of the Rehabilitation Act of 1973, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, Executive Order 11246, all as amended, and/or any other federal, state, or local law or regulation regarding Equal Employment Opportunity, opposing any act or practice made unlawful, or exercising any other right protected by such laws or regulations. AECOM will not discharge or in any other manner discriminate against employees or applicants because they have inquired about, discussed, or disclosed their own pay or the pay of another employee or applicant. However, employees who have access to the compensation information of other employees or applicants as part of their essential job functions cannot disclose the pay of other employees or applicants to individuals who do not otherwise have access to compensation information, unless the disclosure is (a) in response to a formal complaint or charge, (b) in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or (c) consistent with the contractor's legal duty to furnish information.

A handwritten signature in black ink, appearing to read "M. Burke", with a stylized, cursive script.

Michael S. Burke

January 2019

Definitions

41 C.F.R. 60-741.2

“DISABILITY” means, generally, (i) a physical or mental impairment that substantially limits one or more of an individual's major life activities, (ii) a record of such impairment, or (iii) being regarded as having such impairment.

For the purposes of this Program, a disability is substantially limiting if it substantially impairs the ability of an individual to perform a major life activity as compared to most people in the general population. An impairment need not prevent, or significantly or severely restrict the individual from performing a major life activity to be considered substantially limiting.

For the purposes of this Program, major life activities include but are not limited to the operation of a major bodily function, caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, sitting, reaching, lifting, bending, speaking, breathing, learning, reading, concentrating, thinking, communicating, interacting with others, and working.

“A QUALIFIED INDIVIDUAL” means an individual who satisfies the requisite skill, experience, education, and other job related requirements for the particular position he/she holds or desires and who is capable of performing the essential functions of that position, with or without reasonable accommodation for any disability.

Responsibility for Implementation

41 C.F.R. 60-741.44(i)

Lisa Boecker, Sr. Director, Employee Relations and Compliance, has overall responsibility for implementation of the Equal Employment Opportunity Policy and the AAP. The Company has assigned primary management responsibility and accountability for ensuring full compliance with the Program to Todd David, the Affirmative Action Coordinator of the Company. As Affirmative Action Coordinator, Todd David has the authority, resources, support of and access to top management necessary to ensure the effective implementation of the AAP. The Sr. Director, Employee Relations and Compliance actively supports the program and provides assistance whenever it is needed, making managers and supervisors aware of the program and requesting their cooperation and assistance. The identity of the Affirmative Action Coordinator appears on internal and external communications regarding the Company's Equal Employment Opportunity Policy and AAP.

With regard to the Company AAP, Lisa Boecker works closely with the Affirmative Action Coordinator to implement the programs which are specific to the Company. Todd David, together with the Human Resources staff, has primary responsibility for implementing programs at the Company.

The duties of the Affirmative Action Coordinator and designees include:

- Developing policy statements, AAPs, and internal and external modes of communication
- Overseeing regular discussions with local managers, supervisors, and employees to ensure the Company's policies are being followed
- Training personnel involved in the recruitment, screening, selection, promotion, disciplinary, and related processes to ensure the commitments in the Company's affirmative action program are implemented
- Advising supervisors their affirmative action efforts and results are a component of their performance evaluations, and the Company is obligated to prevent discrimination and harassment of employees
- Identifying, in conjunction with line management, any problem areas in implementing the AAP, and developing solutions
- Identifying any barriers to employment for individuals with known disabilities and assisting managers in developing possible reasonable accommodations to ensure that individuals with disabilities benefit from equal employment opportunities
- Designing and implementing an internal audit and reporting system that will measure the effectiveness of the Company's Program, indicate the need for remedial action, determine the degree to which the Company's objectives have been attained, determine whether employees with known disabilities have the opportunity to participate in Company-sponsored employment, educational, training, recreational, and social activities, and ensure each location is in compliance with applicable laws and regulations
- Serving as liaison between the Company and enforcement agencies, and between the Company and organizations of and for persons with disabilities
- Encouraging active involvement by Company representatives in the community service

programs of local organizations of and for individuals with disabilities

- Ensuring posters and notices are properly displayed or disseminated in ways that are accessible and understandable to applicants and employees, and
- Keeping management informed of developments in the affirmative action area.

The responsibilities of managers and supervisors under this AAP include:

- Taking action to prevent the discrimination and harassment of employees
- Ensuring their departments fully comply with the spirit and letter of the affirmative action program and policies
- Reviewing the qualifications of all applicants and employees to make sure qualified individuals are treated in a nondiscriminatory manner with regard to hire, promotion, transfer and termination
- Reviewing the job performance of each employee to assess whether personnel actions are justified based on the employee's performance of his or her job duties and responsibilities, and
- Working with the Affirmative Action Coordinator or Human Resources Manager and qualified employees or applicants with disabilities to determine appropriate reasonable accommodations if they are necessary for performance of the job and/or the recruitment process.

Request for Self-Identification

41 C.F.R. 60-741.42

In order to notify applicants and employees of the existence of and the opportunity to participate in this affirmative action program and to provide sufficient data to allow AECOM Technical Services Inc. to measure and improve, if necessary, the effectiveness of the Company's affirmative action efforts, AECOM Technical Services Inc. invites applicants and employees to complete an invitation to self-identify status as a person with a disability as follows:

- When an applicant applies or is considered for employment, the Company provides the applicant with a copy form CC-305 at the same time the Company invites the applicant to self-identify race, ethnicity, sex, and veteran status.
- Following an offer of employment but before the individual begins his/her job duties, the Company provides an additional copy of form CC-305.
- Recognizing an individual's status regarding disability may change over time and/or an employee may feel more comfortable disclosing an existing disability after being employed for a period of time, the Company also sends a copy of form CC-305 to all employees at least once every five years. In addition, the Company posts a copy of the Invitation to Self-Identify and at least once during the five-year intervals between workplace surveys, sends a written reminder to employees that they may voluntarily update their disability status.

The Company keeps all self-identification information confidential and maintains it in a data analysis file rather than in individual employee personnel or medical files.

Review of Personnel Processes

41 C.F.R. 60-741.44(b)

AECOM Technical Services Inc. periodically reviews its personnel procedures to determine whether they ensure the careful, thorough, and systematic consideration of the job qualifications of employees or applicants with known disabilities for jobs filled either through vacancy or promotion and for educational or training opportunities. The Company ensures that its personnel processes facilitate the implementation of the affirmative action program.

Vacancies are advertised, and applications are accepted from any interested person. AECOM Technical Services Inc.'s employment application, the careers section of its website, and all advertisements include a non-discrimination statement to further assure applicants of the Company's policy of equal employment opportunity. An EEO statement will be included in other recruitment literature should the Company use such documents in the future. All non-executive positions lasting three days or more not expected to be filled from within will be referred to the appropriate state employment service delivery system. In addition, to ensure qualified individuals with disabilities are aware of openings, the Company will send vacancy announcements to selected sources listed in the Outreach, Positive Recruitment, and External Dissemination of Policy section of this Affirmative Action Program.

The disability of any otherwise qualified individual who applies for any vacancy, promotion, transfer, or training opportunity will not be a factor in employment decisions. The Company periodically reviews any physical and mental job qualifications to ensure they do not tend to screen out individuals with disabilities for reasons that are not job related or consistent with business necessity, or do not relate to ensuring the safe performance of the essential functions of the job. The Company makes any necessary modifications to ensure applicants and employees receive equal opportunity in the operation of our personnel processes, and that persons with disabilities are not stereotyped in a manner that limits their access to jobs for which they are qualified.

The Company also ensures applicants and employees with disabilities who meet job qualifications have equal access to its personnel process, including those implemented through information and communication technologies, and provides necessary reasonable accommodation to ensure that applicants and employees with disabilities receive equal opportunity in the operation of personnel processes. Finally, the Company makes sure its personnel processes do not limit, segregate, or classify an employee or job applicant in a way that adversely affects employment opportunities or status on the basis of disability.

Review of Physical and Mental Job Requirements

41 C.F.R. 60-741.44(c)

AECOM Technical Services Inc. reviews physical and mental job qualification requirements as job qualification requirements are established or revised to ensure qualification requirements do not screen out qualified individuals with disabilities or qualified disabled veterans for reasons that are not job related or consistent with business necessity and the safe performance of the essential functions of the job. This review occurs at regular intervals throughout each calendar year, such as when a job may be advertised or filled through hiring or promotion, when the duties of a position are significantly revised, and when considering requests for reasonable accommodation related to the performance of the functions of a position.

AECOM Technical Services Inc. also regularly reviews its personnel processes to ensure any medical exams or inquiries are conducted in accordance with the Section 503 regulations. Information regarding the medical condition or history of an individual obtained as a result of any such inquiry or exam is collected and maintained on separate forms and in separated medical files and treated as a confidential medical record.

To the extent any physical or mental job qualification measurements are found to potentially screen out qualified individuals with disabilities or qualified disabled veterans in the selection of employees or applicants for employment or in other changes in employment status, such as promotion or training, AECOM Technical Services Inc. will ensure the requirements are related to the specific job for which the individual is being considered and are consistent with business necessity and the safe performance of the job.

To date, no qualification requirements have been identified that are likely to have a screening effect. All job qualification requirements have been found to be job related, consistent with business necessity, or required for the safe performance of the job.

Reasonable Accommodations

41 C.F.R. 60-741.44(d)

AECOM Technical Services Inc. has made and will continue to make reasonable accommodations, which do not impose undue hardships on its business, to the known physical and mental limitations of otherwise qualified employees and job applicants.

Included among the specific accommodations for qualified individuals with disabilities that have been implemented are the following:

- Short- and long-term disability programs provide pay for eligible employees absent due to disability.
- A personal leave policy enables eligible employees to accumulate paid time off to be used for medical appointments or personal illness.
- A medical leave of absence is available to any employee who provides medical documentation of disability, where the requested absence constitutes a reasonable accommodation.
- Adaptive equipment, such as supportive desk chairs, special computer monitors and/or keyboards, is made available when necessary to enable an employee to perform an essential job function.
- Should reasonable accommodations be necessary to facilitate access to work areas by qualified employees or applicants with known disabilities, the Company will take reasonable steps to provide such accommodations.
- If necessary to accommodate a disability, the Company will redesign jobs to eliminate nonessential functions, unless the redesign creates an undue hardship.
- The Company will arrange suitable work hours for employees returning from sick leave, leave of absence, and long-term disability where that arrangement constitutes a reasonable accommodation.
- The Company will accommodate employees with disabilities by allowing a reasonable amount of time off for physicians' visits.
- Special parking for individuals with disabilities is available at AECOM Technical Services Inc..
- The Company's online application system makes clear to all applicants that if they are unable to fully use the automated system, they may follow specified alternate procedures so that they receive equal opportunity to apply for and be fully considered for all jobs.
- The Company has designed its online application system and its internal information and communication technologies to increase the accessibility of those systems.

If an individual has a disability, the Company encourages the individual to tell us about (i) any special methods, skills, and procedures which qualify him or her for positions which he or she might not otherwise be able to do, so that he or she can be considered for any position of that kind, and (ii) the reasonable accommodations which would enable the individual to perform the job properly and safely. Such accommodations may include special equipment, changes in the physical layout of the job, elimination of certain nonessential duties related to the job, or other

reasonable accommodations.

The Company informs employees and applicants of its desire to discuss reasonable accommodations in various ways, including through our Policy Statement and on the Invitation to Self-Identify. Both the Policy Statement and the Invitation to Self-Identify are provided to employees and applicants, and posted for to employees. Individuals interested in discussing accommodations may contact Todd David, the Affirmative Action Coordinator, the Human Resources Department, and/or the individual's supervisor. Managers and supervisors are trained to ensure that they know what to do if an employee or applicant makes a request for a reasonable accommodation so that such requests are processed swiftly.

Where an employee with a known disability is having significant difficulty performing their job and the Company reasonably concludes that the performance issues may be related to the known disability, the Company may notify the employee of the performance problem and confidentially inquire whether the problem is related to the employee's disability. If the employee indicates that their disability is impacting performance, the Company will engage in confidential discussions with the employee regarding whether the employee requires reasonable accommodations to improve performance.

Compensation
41 C.F.R. 60-741.21(a)(9)

In offering employment or promotions, AECOM Technical Services Inc. does not reduce the amount of compensation offered to individuals with disabilities because of any disability income, pension, or other benefit the employee receives from another source. Similarly, the Company does not reduce the amount of compensation offered to an employee or applicant because of the actual or anticipated cost of a reasonable accommodation needed, requested, or anticipated.

Internal Communication Procedure

The Company has developed an internal communication procedure whereby all employees, including individuals with disabilities, can raise issues or claims that may arise during the course of their employment. General communications procedures encourage any and all employees, including those with disabilities, to discuss such issues or claims. All matters brought to the attention of the Affirmative Action Coordinator will be confidentially addressed.

Harassment
41 C.F.R. 60-741.44(e)

AECOM Technical Services Inc. has developed and implemented policies and procedures to ensure employees who are individuals with disabilities are not harassed because of their disability status.

A copy of the Company's Equal Employment Opportunity and Affirmative Action Policy Statement forbidding harassment against individuals based on protected characteristics is included in this AAP.

Training
41 C.F.R. 60-741.44(j)

The Company trains personnel involved in the recruitment, screening, selection, promotion, disciplinary, and related processes to ensure the commitments in the Company's AAP are implemented.

Internal Dissemination of Policy

41 C.F.R. 60-741.44(g)

The Company recognizes that, however strong its outreach program, internal support from supervisory management and other employees is necessary to ensure maximum effectiveness of its AAP for individuals with disabilities. So that these employees' awareness of the needs of individuals with disabilities can be increased and employee participation in the program is increased, the Company will utilize the following procedures to maximize the internal implementation and dissemination of its Equal Employment Opportunity and Affirmative Action Policy:

- The Company includes a copy of the policy statement in its Policy Manual.
- AECOM Technical Services Inc.'s policy on equal employment opportunity and affirmative action for individuals with disabilities is posted on Company bulletin boards. The posting includes a statement that employees and applicants are protected from coercion, intimidation, and interference or discrimination for filing a complaint or assisting in an investigation under the Rehabilitation Act of 1973, as amended.
- The Company posts a copy of the policy in electronic format in a conspicuous location on the Company intranet, along with other employment forms, and otherwise ensures all of its personnel have a copy of or the ability to view the policy.
- The Company's electronic applicant process includes information about the Company's commitment to equal opportunity and affirmative action.
- The Company will communicate to employees its obligation to take affirmative action to employ qualified individuals with disabilities and will encourage employee referral of covered applicants.
- AECOM Technical Services Inc. will invite employees who are individuals with disabilities to participate in the AAP.
- Meetings with executive management and supervisory personnel will be conducted at least annually to explain the Company's policy of affirmative action, to make clear the CEO's support for the policy, and to impart to these personnel their responsibility in making the AAP a success.
- An invitation to participate in AECOM Technical Services Inc.'s policy of affirmative action is disseminated to all applicants, as well as to all employees once the Company has extended a job offer, but before beginning employment duties. In addition, in recognition that an individual's disability status may change and/or that employees may feel more comfortable disclosing an existing disability after a period of time in the Company, the Company posts a copy of the invitation to participate in the affirmative action program and distributes the invitation to all current employees at least once every five years.
- When applicable, AECOM Technical Services Inc. publicizes the policy in Company publications.
- The policy is discussed in both new employee orientation and management training programs.
- When applicable, Company publications include articles on accomplishments of all employees, including individuals with disabilities.

If the Company has or becomes party to collective bargaining agreements, union officials will be informed the Company is bound by the terms of the Rehabilitation Act of 1973, as amended, and is committed to take affirmative action to employ and advance in employment persons with disabilities, and the Company will not discriminate against individuals with physical or mental disabilities. For those sites that are not subject to a collective bargaining agreement, no notification of union officials is necessary.

Outreach, Positive Recruitment and External Dissemination of Policy

41 C.F.R. 60-741.44(f)

AECOM Technical Services Inc. has reviewed its employment practices to determine whether its personnel programs are designed to effectively recruit and advance in employment qualified individuals with disabilities. While the Company believes there are no deficiencies in its current employment practices with respect to applicants and employees with disabilities, it engages in outreach, positive recruitment, and external dissemination programs to augment its existing affirmative efforts. For example, the Company sends written notification of its affirmative action policy to all subcontractors, including subcontracting vendors and suppliers, and requests appropriate action on their part. In addition, the Company engages in or has made plans to implement the following activities:

- Executives, management officials, supervisors, and other employees of the Company are encouraged to assist in the effort to disseminate AECOM Technical Services Inc.'s policy of affirmative action to appropriate individuals outside of the Company.
- The Company will inform recruiting sources of AECOM Technical Services Inc.'s policy of affirmative action for individuals with disabilities. Recruiting sources will be requested to actively recruit and refer qualified individuals with disabilities for all positions.
- AECOM Technical Services Inc. makes the Equal Employment Opportunity Clause part of all covered contracts and purchase orders.
- AECOM Technical Services Inc. will identify local organizations and/or community agencies known to specialize placing and/or developing training programs for individuals with disabilities and send them notices of vacant positions. Examples of these outreach efforts include:
 - State Vocational Rehabilitation Service agencies, mental health agencies, and/or developmental disabilities agencies in the states covered by this AAP
 - Employment One-Stop Career Centers in the states covered by this AAP
 - Department of Veterans Affairs offices close to the facilities covered in this AAP
 - Private recruitment sources, such as professional organizations or employment placement services that specialize in placement of individuals with disabilities
- When appropriate, the Company will invite community service and other outreach partners to tour the office and discuss our Company, job recruitment needs, selection process, and other details related to recruitment and placement. In the event a partner is unable to schedule an on-site meeting, the Company will suggest a telephone meeting so they can better identify qualified individuals for our positions.
- When appropriate, AECOM Technical Services Inc. will include disabled individuals when employees are pictured in consumer and personnel recruitment advertising.
- AECOM Technical Services Inc. makes reasonable accommodations for qualified individuals with disabilities.
- AECOM Technical Services Inc. advertisements or solicitations for prospective employees indicate that Company is an equal opportunity employer.
- As described in more detail in Exhibit B, AECOM Technical Services Inc. evaluates the

effectiveness of its outreach and recruitment efforts to determine if its affirmative action objectives are being met, and makes appropriate changes.

Data Collection Analysis

41 C.F.R. 60-741.44(k)

AECOM Technical Services Inc. documents computations or comparisons pertaining to applicants and hires on an annual basis and maintains the documentation for a period of three years.

Utilization Analysis

41 C.F.R. 60-741.45

AECOM Technical Services Inc. will compare the representation of employees with known disabilities in our workforce with the utilization goal identified by Office of Federal Contract Compliance Programs in effect at the start of this Affirmative Action Program year. In conducting this analysis, the following principles apply:

- The purpose of the utilization goal established by OFCCP is to provide a benchmark against which the Company may measure the representation of individuals with disabilities in its workforce.
- OFCCP believes the utilization goal serves as an equal employment opportunity objective that should be attainable through the use of the affirmative action measures included in this Affirmative Action Program.
- The utilization goal is not a quota that must be met, nor is it to be considered as a ceiling that limits or restricts the employment of individuals with disabilities.
- In all employment decisions, the Company makes selections in a nondiscriminatory manner. Utilization goals do not provide a justification to extend a preference to any individual, select an individual, or adversely affect an individual's employment status, on the basis of that individual's disability status.
- Utilization goals do not create set-asides for specific groups, nor are they intended to achieve proportional representation or equal results.
- Utilization goals are not used to supersede merit selection principles, nor do these utilization goals require the Company to hire a person who lacks qualifications to perform the job successfully or hire a less qualified person in preference to a more qualified one.
- A finding that the utilization goal has not been attained in the workforce does not constitute either a finding or admission of discrimination.

Identification of Problem Areas

41 C.F.R. 60-741.45(e)

When the Utilization Analysis conducted in accordance with the regulations indicates the representation of individuals with known disabilities is less than the current goal identified by OFCCP, the Company will take steps to assess whether and where impediments to equal employment opportunity exist, including the following, as appropriate:

- Sources which have provided limited qualified candidates will be reviewed, and the Affirmative Action Coordinator will identify actions which may increase the number of qualified applicants received.
- The Affirmative Action Coordinator will review positions or job groups that require specialized skill sets or physical requirements.
- Our affirmative action program audit will be reviewed.
- The Affirmative Action Coordinator will review our personnel processes to ensure the careful, thorough, and systematic consideration of the job qualifications of applicants and employees with known disabilities and that no barriers to equal employment opportunities exist.

Based on this analysis, we have developed and will execute the action oriented programs described in this AAP.

Development and Execution of Action-Oriented Programs

41 C.F.R. 60-741.45(f)

To demonstrate our good faith efforts to expand employment opportunities for individuals with disabilities and to produce measurable results, the Company developed and executed the following action oriented programs, as appropriate:

- The Company will continue to analyze all positions and prepare written descriptions to accurately reflect position functions and to ensure any physical or mental requirements are job related and consistent with business necessity.
- Job descriptions will continue to be reviewed to determine the knowledge, skills, abilities, and other requirements necessary for the adequate performance of the job. Specifications will continue to be consistent for the same job title and will not contain any requirements that would result in discrimination on the basis of sex, gender identity, sexual orientation, race, color, religious creed, national origin, physical or mental disability, and/or protected veteran status, or any other characteristic protected by law.
- Job descriptions are available to incumbents and all members of management involved in the recruiting, screening, selection, and promotion process. Job descriptions are also made available to employees, applicants, and recruiting sources as appropriate.
- The Company has carefully evaluated the total selection process and found it to be free from discrimination:
 - We have instructed supervisory personnel to ensure elimination of discrimination in personnel actions in which they are involved.
 - Application forms do not contain questions with potential discriminatory effects.
 - All parts of the selection process are free from stereotyping of individuals with disabilities in a manner which limits their access to jobs for which they are qualified.
 - The Company does not and will not use any selection techniques that can be improperly used to discriminate against individuals with disabilities.
- The Company has evaluated its techniques for improving recruitment and increasing the flow of qualified applicants with disabilities through the following:
 - All employees are actively encouraged to refer applicants to the Company.
 - The Company lists all required positions with the appropriate state workforce agency and state disability agency.
 - The Company provides copies of policies to inform new employees of their equal employment rights and responsibilities, right to request reasonable accommodation, promotional opportunities, Company rules, and ways to alleviate any problems that might arise.
 - The Company identifies alternative or additional outreach and recruitment efforts to increase recruitment of individuals with disabilities.
- The Company has implemented the following programs and procedures to ensure employees with disabilities are given equal opportunities for promotion:

- o On-the-job training is provided to all qualified employees to assist them in developing the necessary knowledge and skills for promotion to higher level jobs. In addition, a tuition reimbursement benefit is available to all qualified employees.
- o The Company utilizes a formal performance evaluation program for all employees. Management and supervisors are trained on the basic methodology of performance evaluation.
- o Employees with known disabilities are not required to possess higher qualifications than those of the lowest qualified incumbent in the job for which they apply.
- o Seniority practices are not a problem since the Company has no formal seniority system. Promotions are based on merit selection principles.
- o We will continue to make opportunities for advancement widely known through our internal posting process which encourages all employees, including employees with disabilities, to apply for any open position for which they are qualified with or without reasonable accommodation.
- o We have assessed our personnel processes, and have concluded our personnel processes continue to ensure the careful, thorough, and systematic consideration of the job qualifications of applicants and employees with known disabilities and that no barriers to employment exist.

Monitoring and Reporting Systems

41 C.F.R. 60-741.44(h)

It is the responsibility of the Company's Affirmative Action Coordinator to monitor all employment and personnel practices to ensure compliance with applicable regulations and adherence to the Company's Statement of Policy, to report specific problems to the appropriate management personnel, and to measure the effectiveness of AECOM Technical Services Inc.'s AAP.

The Company's audit and reporting system is designed and implemented to:

- Measure the effectiveness of the AAP
- Identify any need for remedial action
- Determine the degree to which the Company's objectives are being attained
- Determine whether individuals with known disabilities have had the full opportunity to equal employment and to participate in all Company sponsored educational, training, recreational and social activities, and
- Measure the Company's compliance with the AAP's specific obligations.
- Document the actions taken to monitor the Company's compliance with the AAP's specific obligations.

In order to measure the effectiveness of the AAP, the Company may take the following actions:

- Audit its voluntary self-identification process to monitor the number of individuals with disabilities who choose to self-identify and evaluates whether changes could be made to Company's self-identification process to encourage greater voluntary self-identification by individuals with disabilities
- Examine its utilization of individuals with disabilities and develops action-orientated programs to address any areas of underutilization
- Review available data computations and analyses regarding applicants and hires
- Review the effectiveness of the Company's recruitment and outreach activities
- Regularly assess the Company's personnel processes to ensure that individuals with disabilities have equal opportunity in employment
- Use a schedule to regularly assess any mental and physical qualifications to ensure that they are job-related and consistent with business necessity
- Audit the Company's communications with vendors and subcontractors to ensure that such communications reflect the Company's commitment to equal employment opportunity and affirmative action for individuals with disabilities
- Audit the Company's communications with applicants and employees to ensure that such communications reflect the Company's commitment to equal employment opportunity and affirmative action for individuals with disabilities
- Audit the Company's job listings to ensure that the postings reflect the Company's commitment to equal employment opportunity and affirmative action for individuals with

disabilities

- Audit the Company's personnel policies to ensure that such policies reflect the Company's commitment to equal employment opportunity and affirmative action for individuals with disabilities

Where the affirmative action program is found to be deficient, the Company shall endeavor to undertake necessary action to bring the program into compliance.

List of Exhibits

Exhibit A – Reasonable Accommodation Policy and Procedures

Exhibit B – Annual Assessment of Outreach and Recruitment Efforts

Reasonable Accommodations

1. Americans with Disabilities Act

AECOM is committed to complying with all relevant and applicable provisions of the Americans with Disabilities Act (“ADA”), as amended by the Americans with Disabilities Act Amendments Act (“ADAAA”), and related state and local laws. AECOM will not discriminate against any qualified individual with respect to any terms, privileges or conditions of employment because of a person’s physical or mental disability.

Upon request of a qualified individual with a disability, it is our policy to provide reasonable accommodation to allow the individual to perform the essential functions of the position. A reasonable accommodation involves a change or adjustment to job duties or the work environment, including providing or extending a leave, that does not constitute an undue hardship for the Company. Reasonable accommodations enable a qualified individual with a disability to participate in the job application process, to perform the essential functions of their position, or to enjoy the benefits and privileges of employment equal to those enjoyed by individuals without disabilities.

This ADAAA / Reasonable Accommodation Policy is implemented by following this procedure:

1. An individual may request an accommodation in order to perform the essential functions of a job he or she holds or desires by contacting Human Resources and providing sufficient information concerning the nature of the disability and corresponding limitations on his or her ability to perform the essential functions of the position. The accommodation request can be written or verbal and can be made by the individual or by someone else on the individual’s behalf. The accommodation request should specify the accommodation the individual desires to perform the job. Upon receipt of such request for an accommodation, AECOM will evaluate the request and determine whether the requested accommodation is reasonable and will not create an undue hardship for the Company. AECOM may propose an alternative accommodation.
2. In determining whether the requested accommodation or some other reasonable accommodation is appropriate, AECOM will engage in an interactive process with the individual requesting the accommodation. We also will engage in the interactive process with an applicant or employee when AECOM has sufficient information to reasonably believe that the applicant or employee: (a) has a disability, and (b) requires an accommodation. If AECOM concludes a reasonable accommodation can be made, the Company will offer this accommodation to the individual.
3. In evaluating the nature of a disability and whether a reasonable accommodation is available, AECOM may request and rely on information provided by the individual’s health care providers. We may also request information from third parties that possess information or experience relevant to the requested accommodation. All medical information that AECOM obtains about an individual shall be treated as confidential in accordance with the ADAAA, HIPAA and related federal, state and local laws. Individuals requesting an accommodation are expected to fully cooperate in the accommodation process and the interactive dialogue. The duty to cooperate includes making every effort to provide health care provider information regarding the need for, and type of, accommodation. Individuals who do not cooperate in the accommodation process will waive the right to accommodation.
4. In cases where providing or extending a leave constitutes a reasonable accommodation, the terms and conditions of that leave will be in accordance with the ADA and/or, if applicable, the FMLA (or state law equivalent leave law).

An employee who believes he or she has been treated in a manner not in accordance with this policy should inform a supervisor or Human Resources representative immediately. Employees may also use AECOM Ethics Hotline 1-888-299-9602 or 1-770-613-6332 (outside of the U.S.) or email AECOMethics.hotline@tnwinc.com to report incidents of discriminatory, harassing or retaliatory conduct in the workplace or any other violation of Company policies.

2. Religious Accommodation

AECOM is committed to complying with all laws that protect employees' religious beliefs and observances. When requested, the Company will provide a reasonable accommodation for employees' religious beliefs and observances, including religious dress and grooming practices, provided the requested accommodation does not create an undue hardship for the Company or pose a direct threat to the health or safety of others in the workplace or to the requesting employee.

This policy applies to all employees and extends to all aspects of the company's employment practices, including recruiting, hiring, discipline, termination, promotions, transfers, compensation, benefits, training, leaves of absence and other terms and conditions of employment.

To request an accommodation for religious beliefs or observances, employees must notify or submit a written request to Human Resources. An employee requesting an accommodation should include in the request the employee's suggestion for an accommodation. Reasonable accommodations may include a change in job duties or schedule, time off (with or without pay) for religious observances, or exceptions to the Company's dress and appearance code, provided that such exceptions do not pose a direct threat to the health or safety of others in the workplace or to the requesting employee. Once the Company is aware of the need for an accommodation, we will engage with the employee in an interactive process to identify possible accommodations. Employees are encouraged to use this procedure without fear of retaliation.

An employee who believes he or she has been treated in a manner not in accordance with this policy should inform a supervisor or Human Resources representative immediately. Employees may also use AECOM Ethics Hotline 1-888-299-9602 or 1-770-613-6332 (outside of the U.S.) or email AECOMethics.hotline@tnwinc.com to report incidents of discriminatory, harassing or retaliatory conduct in the workplace or any other violation of Company policies.

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Exhibit B - Annual Assessment of Outreach and Recruiting Efforts

AECOM Technical Services Inc. evaluates available data regarding the effectiveness of its outreach and recruitment efforts on an annual basis. For areas where the Company concludes the totality of its efforts were not effective in identifying and recruiting qualified individuals with disabilities, AECOM Technical Services Inc. will identify and implement alternative efforts.

Criteria used to evaluate the effectiveness of outreach efforts may include:

- Results of utilization analysis for individuals with disabilities
- Available data related to applicant and hires
- Whether the activity increased the Company's ability to include individuals with disabilities in its workforce
- Whether the activity attracted qualified individuals with disabilities
- Whether the activity resulted in the selection of qualified individuals with disabilities